THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 147, NO. 10 — CHICAGO, ILLINOIS — NOVEMBER 3, 1951

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MEDICINE CAN BRIDGE THE SULLEN TIDE

CHAIRMAN'S ADDRESS

Rutherford T. Johnstone, M.D., Los Angeles

The profession of medicine is presently faced with the obligation of assuming a function foreign to the generally accepted concept of what constitutes the practice of medicine. Because of medical science, the span of life has been increased. But one is forced to ask whether it is altogether desirable to enable man to live longer under circumstances which are becoming increasingly intolerable? Is it the aim of medicine to obtain for man optimum physical health but to ignore the causes which make him a frustrated and distraught member of society? These questions are not asked lightly but rather to point out the existence of circumstances concerning which the profession has either been unaware or indifferent.

It would be fallacious to contend that the unrest in which mankind is enmeshed is recent. But only the willfully insensitive can fail to feel the increasing extent and intensity of the strife and turmoil existing in the world today. Certainly in America, despite the existence of poverty in some segments of our population and despite evidence of discrimination, life in the past has been tranquil for the majority. To an unbelievable degree all this changed with the advent of modern technology and with our becoming a highly industrialized nation.

This new industrial society has created a pattern of living entirely unlike that dealt with previously by the practitioner of medicine. All walks of life became mechanized, even farming. Human relationships changed. Personal interests gave way to impersonal. As a mechanical cog of the machine he operated, the individual lost his sense of individuality in boredom. His thoughts, acts, and ambitions were rendered null and void by group action and group thinking. Group consciousness set management and labor against each other as well as race against race and creed against creed. Employment became contingent upon membership in the "right group." It is not necessary to enlarge further upon the factors which induced the sociologic fester.

Superficial consideration of the problem would indicate that it be handed over to the social scientist for solution, a proposal I shall subsequently discuss. But a realistic, rational appreciation of the dilemma properly allocates it to the practitioner of medicine, because it is one which demands the application of sound scientific humanism. Who else is so capable? The individual physician, however, needs the support of organized effort, which can come only from the American Medical Association, a proposition which unavoidably leads me to ask: are we a unified organization? I have already cited the frightening uncertainty which disturbs the individual. But it is disconcerting to realize that the quicksands of unrest have engulfed groups and institutions, also because they have been too confused and too divided to save themselves. Moral decay and nationwide corruption alarm even the most optimistic. Recent events indicate that the disintegration of most institutions has resulted from the action of the unfaithful from within rather than the enemy from without. If this can happen to organizations once solid, strong, and forceful, can it happen to the American Medical Association? This question demands a critical appraisal of its membership. The answer is pertinent not only to the problem being discussed here but to all other obligations of organized medicine.

We have within our ranks those who, wittingly or unwittingly, would undermine the full purpose of the American Medical Association. First, there are those few frustrated, elderly men who no longer face the morning or even the noonday sun. Most, if not all of this group have been ethical physicians highly esteemed in their respective communities. Many have held high office in organized medicine, but time is gently easing them into that oblivion where all past officers must go. But because of their past connection with medical societies, these physicians, together with others who have a senile fixation, do not find it difficult to gain access to lay journals. There, with no one to check the accuracy of their statements, they throw stones at the various windows of the American Medical Association, the structure which nurtured them.

In ordinary times these men could be passed by as lovable, irascible "cracker-barrel philosophers." But these are not ordinary times. Because of their previous status,

Read before the Section on Preventive and Industrial Medicine and Public Health at the One Hundredth Annual Session of the American Medical Association, Atlantic City, N. J., June 13, 1951.

their words are quickly seized upon and often distorted by those from without who seek to force a schism within our Association. These physicians need to be reconverted to a faith they once held—to the faith of Osler, Halstead, Keene, Pepper, or DaCosta, at whose feet they once sat.

The second group is composed of physicians who, until a recent event, were silent, inactive, and inert. They accepted the benefits of organized medicine without reciprocating by giving time or money. They were flushed into the open when the American Medical Association assessed its membership twenty-five dollars in order to guarantee to the profession and laity the continuation of the American way of medical practice.

An inquiry into the reasons why this particular bloc objected to the assessment reveals one pertinent fact. Few, if any, felt that the assessment constituted a financial burden which could not be easily met. An analysis of the various objections indicates that to some it was "just the principle of the thing." Others said they did not want to be dictated to by "higher-ups," and a few felt that the "advertising campaign was unwarranted." Yet none of these physicians object to an assessment made by their country club, or the bowling league or by their college alma mater to ensure a good football team. Admittedly, this bloc is numerically insignificant, but nevertheless, it constitutes a force potentially capable of causing disunity within our Association. These physicians provide the enemy with ammunition with which to ambush medicine on its forward march.

Lastly, although one could cite more, there are those malcontents who thrive on the benefits derived from membership in the American Medical Association yet condemn it as an oligarchy. I would recall to them the words of Dr. Nathan Smith Davis, a Founding Father, who stated, "The principle embodied in the first constitution makes the national association emanate directly from local medical organizations and institutions." That principle has never been changed since it was adopted in 1847. A perusal of the history of the American Medical Association will reveal that few of its officers were born to the purple and that the pants of many were worn thin in the saddle. They could not have attained their high office without first having labored in their county and state organizations.

Admittedly, the very nature of any democratic organization permits mistakes, be it our own government, the American Legion, the Rotary, the CIO, or the American Medical Association. Those who fail to accept this fact throw trump cards to the opposition.

To this point I have tried to bring into focus a unique situation. Technology and an industrial society have created environmental threats to man's rightful state of contentment and happiness. To the causes must be applied the preventive and curative skills of medicine. But organized medicine finds itself confronted with malcontents within its membership. Even though such a situation is not new to any institution, never before has there coexisted such a formidable destructive philosophy outside our association bent on crossing our lines to join hands with kindred spirits within our membership. I maintain we have not been sufficiently concerned with the possibility of such a *coup d'état*.

In the accusations I have made I take due cognizance of the rights of members to object to procedures and policies, a right inherent in any democratic organization. But when attitudes are unfounded and when truth is distorted by prejudice and envy, a conversion of these members to truth and "the faith" is in order. Now, as never before, the American Medical Association needs to be unified. Our membership needs to stand up and be counted.

My contention is that medicine contains within its traditional influence the major means of reviving a sick society. Endowed with the means of preventing or curing disease, medicine can also help the individual to adjust himself to his environment. Certainly this is a social function. A great many intelligent persons believe that social scientists can do most to help a dizzy world regain its equilibrium. I speak of the sociologist, the psychologist, and the cultural anthropologist. The sociologist evaluates the deeds, traits, and attitudes existing in our present society. The anthropologist goes back to the beginning of time and explores the gamut of human variability.[1] Basically, the social scientists deal with group cultures, group morals, group tensions, and group actions. They almost uniformly believe that much of the present day conflict between groups or nations is the result of years of cumulative mental immaturity, that for too long we have had men of immature minds sitting in high office.[2]

I am in complete agreement with the disciplines advocated by the social scientists.[3] But I feel these cannot accomplish their purpose without the art and science of medicine. In what manner can medicine aid an ailing society? In the first place, we should not start with groups, such as labor groups, race groups, and religious groups, but rather with individuals and with the individual's family, the smallest unit of society. Love, harmony, and peace of mind within the family is the first in the series of experiences by which we come to love God, our country, and mankind. To rephrase an old political axiom —as the family goes, so goes the nation.

On first thought it would seem that my premise is an encroachment upon the functions of the Church. But here again we find that the minister or priest deals largely with a group, the congregation, and too little with individuals. A sermon is impersonal, and the confessional usually so. Furthermore, the movies, radio, and television have usurped the time once devoted to family worship, family recreation, or family discussions. These same media of entertainment obstruct the once ready access the man of the cloth had to the family living room. Finally, neither the minister nor the members of any other profession have the training to resolve psychosomatic problems.

As a preface to an outline of conduct to which I feel medicine must return, let me recall to you the words uttered by Sir William Osler to the medical profession of America as he took leave of this country to teach at Oxford.[4] "Medicine is the only world-wide profession

1. Kluckhohn, C.: Mirror for Man: The Relation of Anthropology to Modern Life, New York, McGraw-Hill, 1949.
2. Overstreet, H. A.: The More Perfect Union, New York, W. W. Norton & Co., 1949.
3. Johnstone, R. T.: Occupational Medicine: Its Role in the Social World—The Ramazzini Oration, Industrial Med. & Surg. 18: 451-456 (Nov.) 1949.
4. Osler, W.: Aequanimitas, with Other Addresses to Medical Students, Nurses and Practitioners of Medicine, Philadelphia, The Blakiston Company, 1926.

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actuated by the same ambitions and pursuing the same ends. This homogeneity is not shared by law and not by the Church, certainly not in the same degree. A united profession working in many lands has done more for the race than any other body of men." In 1905 Osler was reminding his fellow physicians of a noble tradition attributed to the profession by all mankind. Does the world still believe that we possess this good? Yes. In his book, "The Foundling," Francis Cardinal Spellman writes, "medicine bespeaks a universal language of the heart."

Such is our inheritance and such must continue to be our influence. But in the transition from a practice which was largely an art to one predominately a science, medicine dropped two of its priceless ingredients. The first of these is a sufficiency of time—a sufficiency of time to listen to those who are sick at heart, a sufficiency of time to take a personal, intimate interest in each individual patient. A packed appointment book will not permit the fulfillment of this concept. It requires a sufficiency of time to sound the soul of man. Probably only those who practice industrial medicine fully appreciate the fact that the largest segment of our population suffer from tensions and strife over which they have no control and regarding which they have no understanding. It is also probable that in no other field of practice is there as much being done to help the distraught mind adjust itself to environmental circumstances.

The second priceless ingredient which is diminishing is that of inspired leadership within our profession in the form of personal influence upon the members. The initial opportunity for such influence presents itself to the teacher of medical students. There is considerable evidence today that in our medical schools science is crowding out sentiment. Too early and too much does the student learn about the miracle drugs. Less often, if at all, is he embued with the faith and philosophy of the great men of medicine who made medicine great. Sympathy and understanding of human problems and the travail of the human heart are the primary requisites of a good physician.

The next opportunity we all have for inspired leadership presents itself in the contacts we have with younger physicians, as we meet them in the staff room, at the bedside consultation, or at our medical meetings. Nor is it too late to influence the older physician who has relinquished the human touch for neoscience.

Finally, our various medical journals need to give more space and greater expression to sentiment, certainly those at least which are not limited in purpose to the furtherance of pure science. In view of our present imbalance between science and sentiment it would seem justifiable for our medical journals to reprint on occasion the best from Osler, Holmes, Barrett, Sir Thomas Browne, and that stirring tale of the doctor of "the auld school" found in "The Bonnie Briar Bush."

It has been pointed out that the aim of medicine is to render man physically fit and mentally happy. Physical and mental well-being are dependent upon all environmental factors, yet we have been ignoring the social and economic causes of unhappiness. Attention to these is the present obligation of every physician. He will fulfill this obligation well if he appreciates that for his patients a full life is measured not by length alone but also by depth and breadth.

520 W. Seventh St., Los Angeles 14, Calif.

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SIGMOIDOSCOPY: ITS CLINICAL IMPORTANCE TO THE PRACTITIONER

CHAIRMAN'S ADDRESS

F. G. Runyeon, M.D., Reading, Pa.

As a background for the principal thesis of this discussion, I wish to present certain approximate statistics which will set the stage for an argument for the more general use of sigmoidoscopy: 1. Cancer of the large intestines is the fourth most frequent malignant tumor found in women and second in frequency only to cancer of the stomach in men. 2. Eighty per cent of cancers of the bowel are in the sigmoid and rectum. 3. Seventy-eight per cent of cancers of the sigmoid and rectum are palpable. 4. Ninety per cent of cancers of the sigmoid and rectum are visible through the sigmoidoscope. 5. Seventy-five per cent of malignant tumors of the large bowel develop on the basis of adenomas. This last statement makes the adenoma a very important link in the development of carcinoma of the colon.

WHY THE ADENOMA IS CONSIDERED A PRECANCEROUS LESION

1. Five to 10% of adults have adenomas in the large bowel. 2. In cancer clinics adenomas constitute the most frequently found precancerous lesion. 3. When rectal bleeding is a symptom, the incidence of adenomas reaches as high as 15%. 4. The site of predilection for adenomas and cancer is in the sigmoid and rectum, within reach of the sigmoidoscope. 5. Adenomas are frequently found with carcinoma of the large intestine. In 33% of the cases of carcinoma, adenomas have been found elsewhere in the colon or in resected specimens. 6. The development of cancer has been observed at the exact site of a previously noted adenoma. 7. Cancer has been found at surgery in 66% of the cases of familial multiple polyposis, and 100% of the untreated cases die of carcinoma.

The object of this paper is to encourage the more general use of sigmoidoscopy as a final step in a complete rectal and physical examination. By complete rectal examination I mean inspection of the perianal region, digital examination of the rectum, anoscopy, and sig-

Read before the Section on Gastro-Enterology and Proctology at the One Hundredth Annual Session of the American Medical Association, Atlantic City, June 14, 1951.

moidoscopy. The area covered should be the lower 25 cm. of the colon. The purpose of this examination is to find any lesion in this region and, more particularly, to find any abnormality which is precancerous (such as adenoma) so as to prevent the development of a malignant tumor. Cancers of the colon are so frequently preventable, and such a large percentage are curable if detected in the precancerous or early stages, that a concerted effort at early diagnosis is not only desirable but imperative.

I believe that most gastroenterologists and all proctologists pass the sigmoidoscope routinely in all patients who present themselves for study. Undoubtedly there are others, not specializing in either of these fields, who make general routine physical examinations. They may have many patients come to them for a yearly check up. I want to stress to these physicians the necessity of adding a digital and sigmoidoscopic examination to their physical review. In view of the statistics that have been presented, it is perfectly clear that I am correct in stating that no physical examination is complete without a sigmoidoscopy.

To make such an examination adequate, the lower part of the bowel must be thoroughly cleansed by tap water or enemas of isotonic sodium chloride solution so as to enable the examiner to visualize every square inch of the mucous membrane. At times it is necessary to administer a dose of castor oil (1½ oz. [45 gm.]) the day prior to examination. The patient's resistance to such preparation must be overcome by an explanation of the necessity for such care. It is not possible to rule out the presence of adenomas of the colon unless a clean mucous membrane is present. These patients will be well repaid for their effort at cleanliness when they can be told that the portion of the bowel most frequently affected by cancer is free from that disease and any precancerous lesion.

Of course, any routine examination should start with inspection of the perianal region, an estimation of the sphincter tone, a digital examination with sufficient pressure to allow the finger to reach as high as possible (aided by the patient straining), and sweeping of the finger over the wall of the rectum within reach. The anoscope will demonstrate lesions in the lower part of the rectum—such as hemorrhoids, fissures, fistulas, hypertrophied anal papillae, deep crypts, anal sinuses, infections, and epitheliomas. These conditions are very evident and easy of approach. Frequently a low adenoma will be felt or seen by this examination, but the study is not complete without the passage of the sigmoidoscope and the inspection of the lower 25 cm. of the bowel. It is this procedure that locates the small adenomas, many of which present no symptoms. Any proctologist could cite many instances in which these lesions were found in patients who presented no symptoms that would call for a sigmoidoscopy; therefore, this examination should be a routine procedure.

I believe that all cancer clinics should include a sigmoidoscopy as part of their routine examinations. It is a fact that many such clinics omit this examination unless marked symptoms indicate its desirability. This is obviously a mistake. Dr. Vincent T. Young, of Washington, D. C., reported routine examination of the lower part of the bowel in 500 asymptomatic patients and found five cancers (1%) and 44 polyps (8.8%). Helwig [1] states that 20% of persons of 60 or more have adenomas of the lower part of the bowel. Fansler reported from the cancer clinic of the University of Minnesota that out of 256 patients examined, 4 cancers (1.56%) and 38 polyps (15%) were found. In 2,226 patients examined, 274 with adenomas were found (12%). It appears to me that these figures indicate that a complete study of the lower part of the colon is imperative. It undoubtedly follows that the finding and removing of adenomas of the colon is the safest and surest method of preventing cancer in this organ.

All my cancer patients who have had resection report at regular intervals for a minimum of five years for a thorough review. All my adenoma patients are expected to present themselves for a sigmoidoscopic and x-ray examination once a year for the rest of their lives. Many patients come once a year for a rectal review, at which time sigmoidoscopy is always done. They consider this examination as good as life insurance.

I concede that it is unlikely that I can induce all practitioners to adopt my suggestion at once or that they will study sigmoidoscopy and perfect themselves in its use. That would be too much to expect. One may even question if it is possible to persuade the general practitioner to use a sigmoidoscope when it seems an almost hopeless task to induce him to insert his finger into the rectum. But all the young men of medicine can be trained in the use of this instrument, and into their minds can be instilled the necessity of adding this examination to their routine study of a patient. One can, by familiarizing them with this instrument, make them rectum-conscious, so that they will think no more of using a sigmoidoscope than they now do of using a tongue depressor or a vaginal speculum. It is a lifesaving procedure and can be carried out in the program of training for interns. After proper training the young men of medicine will use the sigmoidoscope as freely as the otoscope or ophthalmoscope. The feared accidents, such as perforation, need not happen, for experience can be gained if each intern is assigned to such training for several months and if he is taught how to use the instrument carefully and safely. A sigmoidoscopy can be requested for all clinic patients in which it is not definitely contraindicated. This will supply the material for training and add to the efficiency of the hospital service. Each hospital should have at least one member of its staff competent to train the interns in the use of the sigmoidoscope, and each intern and resident should have the opportunity to use this instrument. May I urge the reader to carry this thought with him to his own hospital and plan to put it into practice. It will yield big dividends in the saving of lives and the prevention of cancer.

1361 Perkiomen Ave.

1. Helwig, cited by Christianson, H. W., and Tenner, R. J.: Results of Sigmoidoscopic Examinations at a Cancer Detection Center: A Two-Year Study, Am. J. Surg. 81:14, 1951.

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ACUTE HYPERTENSION AND DELAYED TRAUMATIC RUPTURE OF THE AORTA

Walter G. Rice, M.D., St. Louis
and
Kenneth P. Wittstruck, M.D., Dallas, Texas

The problems of physiological effects of acceleration have become of great importance in the Age of Speed. Increasingly efficient methods of propelling the human body through space have required the development of a new field devoted to the analysis and measurement of the stresses that the body or its parts may withstand. As man attempts to keep apace of his own machines, every opportunity to examine specific instances becomes important. As the case reported here concerned a young pregnant woman, the obstetric and medicolegal problems accentuated the immediate practical importance of the pathological features. The occurrence of severe persistent hypertension was an unusual and important feature.

REPORT OF A CASE

During the final month of her first pregnancy, a 20-year-old white woman was a passenger in a taxicab which was involved in a collision with a private automobile. The patient was thrown forward violently and struck the upper part of her chest against the back of the front seat. Medical examination a few minutes later revealed only a few external bruises. Nevertheless, the patient was in an anxious, shock-like state, but this was associated with hypertension (180/120 mm. Hg). She was nervous, upset, and apprehensive. There was no roentgenographic evidence of injury to the thorax.

Conservative treatment with rest and sedatives was ineffective, and eight days after the accident she was admitted to Baylor University Hospital in a highly nervous and anxious state, complaining of severe headaches and a sudden weight gain of 10 lb. (4.5 kg.). Examination disclosed moderate pitting edema of the ankles. Blood pressure was 205/136 mm. Hg. The ocular fundi showed marked intermittent vascular spasm, some intraocular edema, and an auriculoventricular ratio of 3 to 1. The other physical findings were not relevant.

Laboratory tests indicated a severe albuminuria (2,500 mg. per 100 ml.) with retention of nitrogenous substance (Table). There was moderate hypoproteinemia with a reversal of the albumin-globulin ratio. There was no anemia (hemoglobin value was 13.4 gm. per 100 ml.). The urinary specific gravity was 1.018 to 1.030 (uncorrected). The past history was not significant, although mild unrecorded hypertension was mentioned during the course of a routine physical examination. It was also stated that the patient had an unstable blood pressure which could be raised for demonstration to physiology students by moderate effort or excitement. There was, specifically, no history of acute or chronic renal disease. During the prenatal period, blood pressure had been recorded consistently in the neighborhood of 140/80-90 mm. Hg.

A provisional clinical diagnosis of toxemia of pregnancy superimposed on a mild nephritis was made. The patient made no clinical improvement on conservative therapy, and the blood pressure remained elevated. Eleven days after the accident she was successfully delivered of a full-term healthy female infant by cesarean section. During the course of the operation the hypertension persisted in spite of sedatives and general anesthesia.

There was no postoperative lowering of the vascular pressure, and the mild nitrogen retention and slight acidosis remained (Table).

Eighteen days after the accident she suddenly became worse and severe pleuritic and diaphragmatic pains associated with a neutrophilic leucocytosis (16,500 mm.)[1] and mild fever (100.2 F.) developed. X-rays again revealed no thoracic lesion. Suddenly, while eating, she gasped for breath, collapsed, and died within two or three minutes. Death came 20 days after the trauma, nine days after the cesarean section, and two days after the onset of the final symptoms.

Necropsy Findings.—The necropsy, which was performed three hours after death, revealed a transverse laceration through the inner coats of the thoracic aorta at a point just distal to the left subclavian branch and the attachment of the ligamentum arteriosum. The laceration involved the whole circumference of the aorta except for a small anterior portion. It extended through the intima and greater part of the media, which had become separated, producing a semicircular defect in the wall. In addition, there was a recent extensive dissection through the media extending downward from the defect. The dissection involved two-thirds of the circumference and extended as far as the celiac artery. The peritoneal space contained about 500 ml. of recently extravasated, partially clotted blood. The mediastinum was filled with blood, especially in its superior portion. The pleural spaces each contained about 1 liter of clear, watery fluid.

The heart weighed 330 gm. There was moderate thickening of the left ventricle wall (2.1 cm.). (The patient weighed 55 kg., and these figures were interpreted as indicating a mild degree of myocardial hypertrophy.)

Histopathology.—All of the layers of the ascending aorta and of the aorta below the celiac artery presented a normal histologic appearance. However, sections taken through the area of rupture revealed a U-shaped defect in the arterial wall, which involved both intima and media. The inner surface of this defect was covered with a layer of newly formed hyperplastic endothelium. Radiating from the defect was a reparative process

Summary of Blood Chemistry Findings

Days Before Death	Urea, Mg./100 Ml.	Urea Nitrogen, Mg./100 Ml.	Creatinine, Mg./100 Ml.	Uric Acid, Mg./100 Ml.	Chlorides, (NaCl)	Sodium, Mg./100 Ml.	Plasma Protein, Gm./100 Ml.		CO_2-Combining Power, Vol./100 Ml.
							Albumin	Globulin	
12	46	21	2	3.2	...	...	2.2	2.8	..
9	55	25	..	2.8	...	...	...	...	37
8	68	32	..	4.0	580	134	...	...	48
6	..	..	..	2.8	560	141	...	...	47
2	27	12	..	3.3	...	...	...	...	..
1	50	20	..	...	560	...	...	...	..

From the Department of Pathology, St. Louis University (Dr. Rice), and from the Department of Pathology, Baylor University Hospital (Dr. Wittstruck).

1. Griffiths, S. J. H.: Traumatic Rupture of the Aorta, Brit. J. Surg. 18: 664, 1931.

involving a wedge-shaped zone in which the muscle fibers were irregularly separated. The reparative tissue had the typical structure of well-formed granulation tissue with broad, heavy eosinophilic bands of collagen, young actively growing stellate, fusiform fibroblasts, and newly formed capillaries. Through this tissue there were congregated focuses of lymphocytes and neutrophiles. In the media immediately adjacent to the granulation tissue there were irregular zones of eosinophilic coagulation necrosis. One small vasa vasorum in the tissue immediately adjacent was also necrotic, and its lumen was filled with amorphous granular debris.

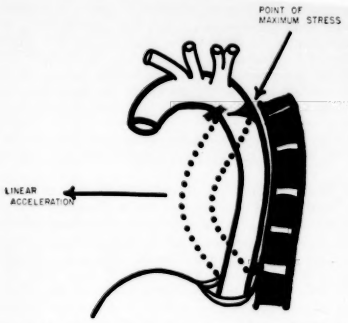

Fig. 1.—Diagrammatic representation of the mechanism of laceration of the healthy aorta by indirect violence.

Through this region there were numerous medullated nerve fibers. These were surrounded and compressed by the actively proliferating granulation tissue.

Generally, throughout the body, the arteries and arterioles showed moderate hyperplasia and hypertrophy of the medial smooth muscle. There were a few focuses of fibrinoid necrosis. There was no hyalinization, nor was there endarteritis.

The kidneys revealed rare hyalinized glomeruli. The major lesion was the concentric medial hypertrophy and hyperplasia of the smooth muscle in small arteries and arterioles.

RELATIONSHIP OF SYMPTOMS TO LESIONS

Twenty days before the patient's death, the previously healthy thoracic aorta was lacerated by indirect violence. This was confirmed by the histologic appearance of the granulation tissue, which was estimated to be from 14 to 28 days old. The laceration involved the tearing and separation of the media with some interstitial hemorrhage. This trauma led to an initial acute shock, which was marked by a hypertension. The hypertension initially was produced by spasm of the vessel at the site of injury. Although complete rupture of the wall did not occur, an almost complete circular separation of the intima and media left a defect that subsequently became reendothelialized. The hypertension persisted, first as a direct result of the vascular spasm, later as a result of arteriolar hypertrophy and reflex stimulation of the cardiac arc. Reparative processes proceeded until two days before death, when blood in the aorta began to dissect the media from the weakened point in the wall. This was associated with pleuritic pains and leucocytosis. The rate of dissection was probably accentuated by the hypertension and the unknown effect of the pregnancy. Finally, the aorta ruptured producing massive hemorrhage and sudden death, on the 20th day.

2. Hass, G. M.: Types of Internal Injuries of Personnel Involved in Aircraft Accidents, J. Aviation Med. 15:77, 1944.

COMMENT

Force.—The taxi was reported to have been proceeding with icy street conditions at about 25 to 30 miles per hour. The private automobile, travelling in the opposite direction, was estimated to have been moving at 15 to 20 miles per hour. Taking into consideration the low frictional resistance of the icy surfaces, the estimated velocity of impact was, therefore, from 40 to 50 miles per hour.

At the moment of impact, the body was suddenly decelerated with a force equal to the sum of the velocities of the colliding vehicles. From the formula $a=\frac{v}{t}$ the linear deceleration occurring "instantaneously" in 0.1 seconds is approximately equivalent to 17 to 23 g (where g is the acceleration of gravity).

According to Hass,[2] "whenever one part of the body is decelerated at a rate which is different from that of another part . . . the connection between these two parts is placed under stress which is proportional to the rates of deceleration."

In linear deceleration of the thorax, the central portion of the descending aorta, being the least rigidly bound, is snapped forward by the momentum of the deceleration force and the mass of the aorta's content of blood. This force is irregularly absorbed by the elasticity of the vessel and the thoracic contents. (When the aortic elasticity is already partially reduced during systole, there is less elasticity available to absorb the effects of the differences in linear deceleration, while at the same time the mass of blood within the vessel proportionately increases the forward force which must be absorbed.) The upper portion of the aorta is most rigidly fixed by the great vessels of the arch and the ligamentum arteriosum. This portion decelerates at the same rate as the whole body, while because of its less rigid fixation the descending aorta decelerates at a different rate. This difference constitutes the force which is concentrated at the point of maximum fixation. This point, directly below the left subclavian artery and ligamentum arteriosum (Fig. 1), is the classical site for rupture of the healthy aorta due to indirect violence. This was the site of the initial lesion in the present case.

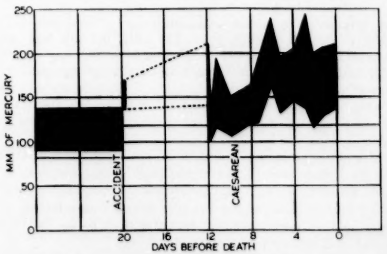

Fig. 2.—Graphic demonstration of the excessive hypertension dating from the time of the accident and unaffected by removal of the fetus.

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The physical effects of the full-term pregnancy in the abdominal cavity cannot be ignored. The pressure of the uterus and its contents on the abdominal aorta prevent rapid egress of blood from the thoracic aorta. Any sudden violent increase in intrathoracic pressure can be expected to produce a serious rise in the intra-aortic pressure under these conditions. This may have been a further minor factor in the development of the initial laceration.

Hypertension.—Cause: The severe hypertension dated from the onset of the accident (Fig. 2). It was not relieved by rest, sedatives, anesthetics, and antispasmodic drugs. The mechanism of the production of this hypertension may well have been direct local sustained spasm

Fig. 3.—Section through the lacerated area in the outer one-third of the aortic media revealing active granulation tissue surrounding a distorted nerve fiber.

of the damaged aorta. It is well established that local segmental spasm can be produced in the large arteries by mechanical trauma alone.[3] Nevertheless, other factors may also bear responsibility. A striking feature of the local lesion in the aorta was the presence of large numbers of nerve fibers. These were probably a part of the superficial cardiac plexus and its sympathetic branches which lie in close proximity to the ligamentum arteriosum. Many of these fibers belong to the efferent accelerator nerves of the heart. Prolonged stimulation would produce an imbalance in the nervous control of the heart with increase in the rate and force of the cardiac cycle. Histologically, the fibers are surrounded by actively growing granulation tissue (Fig. 3). Many were probably damaged at the time of the initial laceration. This sustained irritation of the cardiac reflex arc may be in part responsible for the hypertension.

The patient was known to have an unstable blood pressure, normally somewhat higher than average and readily increased by excitement and exercise. This may have formed the background for the final excessive pressures which were recorded.

Effect: Brief consideration must be given to the effects of the 20-day hypertension. Direct action of intravascular pressures, which were recorded as high as 240 mm. of mercury, could be expected to develop the following influences: (1) a decrease in the effectiveness of the healing process by direct physical pressure, (2) the production of the focal ischemic necrosis that was found in the region of the arterial laceration, (3) an increase in the internal arterial pressures causing the dissection and rupture, and (4) the acceleration of the rate of dissection once the process commenced.

Intravascular pressures, even as high as those here recorded, are generally conceded to be insufficient to produce rupture per se in the healthy aorta.[4] (Klotz and Simpson [5] found that 1,000 mm. of mercury was necessary to produce rupture in healthy aortas.) The initial tear occurring at the time of the accident and the associated excessive intravascular pressure combined to produce the final dissection and rupture.

Indirectly, the hypertension was responsible (1) for the moderate left cardiac hypertrophy, and (2) the medial hypertrophy seen in the peripheral arterioles. Three weeks of increased work is a sufficient period to produce a measurable increase in cardiac muscle bulk and weight.

SUMMARY

The case of a young pregnant woman who survived a partial laceration of the thoracic aorta for 20 days is reported. This case raised obvious medicolegal and diagnostic obstetric problems aside from the interest in the pathological processes involved. An estimate of the forces involved and the mechanics that contrived to produce rupture of a healthy aorta is made.

The occurrence of a severe intractable hypertension is explained on the possible basis of (*a*) local segmental spasm of the aorta as the result of the trauma, or (*b*) reflex irritation of cardiac accelerator nerves aggregated in the superficial cardiac plexus at the site of the laceration. The presence of previous mild hypertension and pressor instability is believed to have formed the etiological background.

St. Louis University, 1402 S. Grand Blvd. (Dr. Rice).

3. Cohen, S. M.: Traumatic Arterial Spasm, Lancet **1**: 1, 1944. Kinmonth, J. B.; Simeone, F. A., and Perlow, V.: Factors Affecting the Diameter of Large Arteries with Particular Reference to Traumatic Spasm, Surgery **26**: 452, 1949.

4. Strassman, G.: Traumatic Rupture of the Aorta, Am. Heart J. **33**: 508, 1947.

5. Klotz, O., and Simpson, W.: Spontaneous Rupture of the Aorta, Am. J. M. Sc. **184**: 455, 1932.

Doctor-Patient Relationship.—Both public and practitioners must realize that it is less important to have a well-known physician than to be well-known by one. They should seek to set up long-term relationships with each other. The fruits of these associations, although they may not be borne for years, will nevertheless be nourishing. The alternative is a medicine of specialists out of touch with their patients as persons. The American people deserve better than this and their need can only be filled by the general practitioners.—Ian Stevenson, A New Day for the General Practitioner, *GP*, August.

AUREOMYCIN, CHLORAMPHENICOL, AND PENICILLIN IN TREATMENT OF BACTERIAL PNEUMONIA

Harrison F. Flippin, M.D., Walter V. Matteucci, M.D., Nelson H. Schimmel, M.D.
and
William P. Boger, M.D., Philadelphia

The efficacy of penicillin administered parenterally in the treatment of many types of bacterial pneumonia is well established. Likewise, aureomycin, chloramphenicol, and oral penicillin have been successfully employed in this disease. Unfortunately, the wide therapeutic range of these agents has resulted in a failure in most instances, both in home and hospital practice, to do careful diagnostic studies. Usually, the necessary laboratory work is reserved for cases failing to respond to therapy. For this reason, accurate figures dealing with the treatment of large groups of pneumonia patients are becoming increasingly difficult to assemble, and, as a consequence, data regarding the use of the newer antibiotics are limited. Hence, confusion exists in the minds of many as to the antibiotic of choice in the initial treatment of bacterial pneumonia. Of considerable interest, therefore, are data collected in a single hospital where these antibiotics have been employed during the same pneumonia season. This report deals with a controlled study of the use of aureomycin, chloramphenicol, and penicillin in the treatment of bacterial pneumonias in adults, in the Philadelphia General Hospital, during the winter of 1949-1950.[1]

ORGANIZATION OF THE STUDY

For this study the pneumonia patients, admitted to the fever wards, were divided into three therapeutic groups. Of the 68 patients in the controlled series, 29 were treated with aureomycin,[2] 22 treated with chloramphenicol, and 17 received oral penicillin. In addition, a fourth group of 25 patients, admitted to the general medical wards, were treated with penicillin administered intramuscularly. This last group was representative of patients receiving accepted therapy for pneumonia during the same period that the controlled study was in progress. In general, the four groups were comparable as to distribution of factors influencing prognosis, with the possible exception of a higher number of patients over age 60 in the parenteral penicillin group. We have included all patients with a diagnosis of pneumonia who received treatment, regardless of their length of stay in the hospital. The entire group of patients were acutely or, at least, moderately ill as patients must be in order to gain entrance to the wards of this hospital. Furthermore, they were for the most part representative of the indigent, poorly nourished and chronic alcoholic type person.

The diagnosis of pneumonia was established by the clinical history and the findings on physical and laboratory examinations. When indicated, the diagnosis was confirmed by roentgen studies. Pneumococci were obtained from the sputum and/or blood stream in 60 patients, with 16 of the organisms tested for in vitro sensitivity against the various antibiotics (penicillin < 0.08 to < 0.1 units; aureomycin < 0.1 to 2.5 mg.; chloramphenicol < 0.8 to 3.12 mg.).

In an attempt to correlate the amount of antibiotic in the circulating blood with the clinical response, determinations of antibiotic plasma concentrations were done on 54 of the 68 patients receiving oral antimicrobial therapy. The tests were made after the third day of therapy with three blood samples being taken after a given dose of the medicament to determine the existing plasma concentrations.

Dosage.—The following dosage schedules were employed. With aureomycin, an initial 0.5 gm. dose by mouth was followed by 0.25 gm. every six hours, with an average total dose of 8 gm. With chloramphenicol, the dosage schedule was 1 gm. initially by mouth, followed by 0.5 gm. every six hours thereafter, with an average total dose of 14.2 gm. The oral penicillin group received 500,000 units of penicillin initially, followed by 250,000 units every 12 hours, with a total dose of 3 million units.

In the group of patients receiving penicillin intramuscularly, an initial dose of 300,000 units of procaine penicillin in combination with 100,000 units of crystalline penicillin was followed by 300,000 units of procaine penicillin in aqueous solution each day, with an average total dose for this group of 3,800,000 units.

RESULTS

Mortality.—Of the 93 patients in this study, 9 died (9.7% mortality). Three of this subgroup were moribund on admission and died within 24 hours (5.6 corrected per cent mortality). Of these, one was a 47-year-old man who received but a single dose of penicillin intramuscularly and at autopsy was found to have had an extensive pneumonic process and marked myocardial degeneration. The other two patients who died within 24 hours were both over 60 years of age. One, with Type VII pneumococcic bacteremia, received a single dose of penicillin intramuscularly, and after death an acute fibrinous pericarditis and an extensive pneumonia process was found; the other patient received three doses of chloramphenicol, but the cause of death was not established as autopsy permission was refused. Of the remaining deaths two were in octogenarians, one of whom

From the Medical Service, Philadelphia General Hospital, and the Section of Infectious Diseases, the University of Pennsylvania.

Read before the Section on Experimental Medicine and Therapeutics at the One Hundredth Annual Session of the American Medical Association, Atlantic City, June 14, 1951.

1. Clinical facilities were given us for this study by the following chiefs of service: Drs. Frieda Baumann, R. S. Boles, T. M. Durant, H. L. Goldburgh, D. W. Kramer, D. N. Kremer, W. G. Leaman Jr., T. G. Schnabel, and C. M. Thompson.

2. The aureomycin and chloramphenicol used in this study were supplied to us by Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y., and Parke, Davis & Company, Detroit, respectively.

received oral penicillin and in whom postmortem examination revealed an acute coronary occlusion. The other received penicillin intramuscularly and was found to have a pulmonary embolus and a lung abscess. Two sexagenarians who received penicillin intramuscularly had chronic nephritis with marked azotemia, and marked arteriosclerosis, respectively. Other deaths included a 73-year-old woman who received oral penicillin and died primarily as a result of chronic nephritis. A 52-year-old man, with Type I pneumococcic bacteremia, was treated with penicillin intramuscularly, developed a marked azotemia and at death was found to have chronic nephritis.

In addition to the two patients with bacteremia who died, there were six other patients with bacteremia (one treated with aureomycin, two with chloramphenicol, and three with oral penicillin) who survived. Thus, in this small series, there was a 25% mortality among the bacteremic cases.

Temperature Response to Treatment.—Fever curves in the early phases of therapy in the successfully treated patients showed striking differences in the various treated groups (Chart 1). For this study we have considered

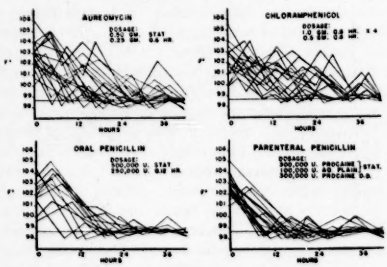

Chart 1.—Temperature responses of pneumonia patients to various forms of therapy.

defervescence to be complete when the oral temperature remains consistently below 99.5 F. Patients receiving penicillin intramuscularly or orally became afebrile much more rapidly than did those receiving aureomycin or chloramphenicol. Furthermore, patients in the latter two groups were more inclined to show secondary elevations in temperature after the initial drop. In the group of patients who survived the illness, there were nine in whom the temperature failed to approach normal within 48 hours. Three of these (one treated with chloramphenicol, two with oral penicillin) had massive pleural effusions. No explanation can be given for the others (three treated with aureomycin, one with chloramphenicol, and two with intramuscular penicillin), except that all of them were generally debilitated and poorly nourished, and a deficiency in the general body defense mechanisms may well be the cause of this delayed response. As indicated, Chart 2 illustrates this type of case, and it can be seen that a substitution of another antibiotic had very little, if any, influence on the natural course of the disease.

The adequacy of all three drugs in oral therapy is nicely demonstrated by the prompt drop in fever and the control of bacteremia with complete recovery in the case shown in Chart 3.

Complications.—In general, the number of complications for the entire series was comparatively small. In three patients (one treated with chloramphenicol and two with oral penicillin) massive pleural effusions developed, and a single patient receiving chloramphenicol had an ischiorectal abscess. All these patients recovered. As in-

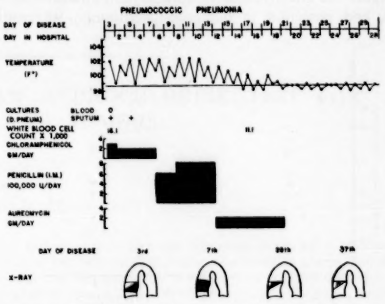

Chart 2.—Pneumonia patient A. M., a man aged 45, in whom antibiotic therapy had little or no influence.

dicated above, two patients with fatal bacteremia, who received penicillin intramuscularly, had acute fibrinous pericarditis. A single instance of lung abscess was observed in an 84-year-old man who died while receiving penicillin intramuscularly.

Relationship of Blood Level to Therapeutic Response.—As indicated in Charts 4, 5, and 6, individual values, as well as the average plasma concentrations for the various antibiotics are shown. The aureomycin and chloramphenicol levels are well above those necessary to inhibit pneumococci in vitro. In the oral penicillin group, the dosage employed resulted in a demonstrable penicillemia for approximately 10 to 12 hours for each 24-hour period. This latter form of treatment actually

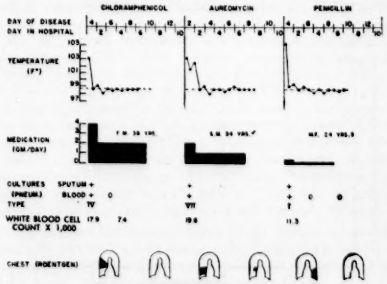

Chart 3.—Forms of oral therapy of pneumonias with septicemia.

was "discontinuous therapy" in some patients, from the standpoint of maintaining measurable amounts of penicillin in the plasma.

Toxic Reactions.—In this study there was a low incidence of toxicity from the use of these antibiotics. In several patients diarrhea, following aureomycin administration, proved troublesome, but did not require discon-

tinuance of therapy. In a single patient receiving chloramphenicol ulceration of the hard palate developed and medication had to be stopped.

COMMENT

In an effort to get more information concerning the comparative effectiveness of aureomycin, chloramphenicol, and penicillin in bacterial pneumonia, 93 cases

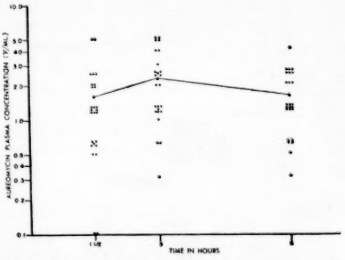

Chart 4.—Aureomycin plasma concentrations; average curve of 26 pneumonia patients (dosage—0.25 gm. every six hours).

of the disease were treated according to four different therapeutic regimens. Unfortunately, the relatively small number of cases in each group prevents a correlation between mortality rate and therapeutic response. Nevertheless, the group as a whole responded satisfactorily to the antibiotics, and it seems probable from these and other reported data that the case fatality rate of pneumococcic pneumonia has reached an irreducible minimum as far as these agents are concerned.

The clinical improvement which usually accompanies the reduction of fever in pneumonia points to the probability that it represents the cessation of the invasion of toxemia-promoting elements in the infection, rather than to any ordinary antipyretic process. Hence, the critical drop in temperature and its return to normal is usually considered as an index of the drug's effectiveness in the

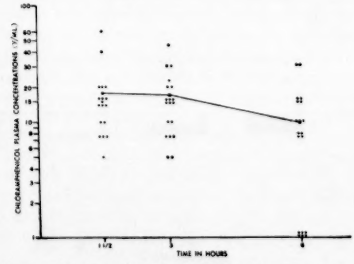

Chart 5.—Chloramphenicol plasma concentrations; average curve of 19 patients (dosage—0.5 gm. every six hours).

treatment of such acute infections as bacterial pneumonia. From this study, it appears that penicillin, intramuscularly or orally administered, produces a more sudden drop in temperature than either aureomycin or chloramphenicol. Furthermore, secondary rises in temperature were observed oftener in patients receiving these newer agents. It should be emphasized, however, that despite the differences in fever patterns observed in these instances, the end-results in all four therapeutic groups were considered satisfactory. No doubt these differences in temperature response are largely due to the bactericidal action of penicillin in contrast to the bacteriostatic properties of aureomycin and chloramphenicol. Since the initial drop in temperature within 24 to 36 hours is usually considered an important sign in the effectiveness of a given drug in the treatment of pneumonia, it would seem advisable to employ the antibiotic most likely to produce this result. However, early in the disease process there is often difficulty in differentiating bacterial and viral pneumonias, and, for this reason, there is a growing tendency to employ drugs with both antibacterial and antiviral properties, such as aureomycin and chloramphenicol. Nevertheless, the relatively high mortality accompanying bacterial pneumonia, in contrast to that in pneumonia due to viruses, demands the use of the agent most likely to produce a rapid response. Furthermore, the toxic reactions accompanying penicillin therapy are undoubtedly less troublesome than those observed with aureomycin or chloramphenicol therapy.

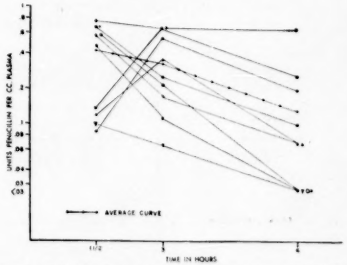

Chart 6.—Penicillin plasma concentrations; average curve of 10 patients (dosage—250,000 units every 12 hours).

As indicated, the dosages employed in this study for the various antibiotics, with the exception of oral penicillin, maintained continuously blood levels well above the concentrations required to inhibit in vitro the organisms commonly encountered as causes of pneumonia. Although the penicillemia was not maintained in the oral penicillin group, the response of the patients was excellent. Despite the inability to demonstrate penicillin in the plasma at all times in these patients, the tissues undoubtedly contained appreciable amounts of penicillin, for it continued to be excreted in the urine during periods when it could not be measured in the plasma. Furthermore, it has been demonstrated in vitro and in animals that when susceptible organisms are exposed to effective concentrations of penicillin, the majority are killed but the survivors do not resume multiplication until several hours later, even in the absence of demonstrable penicillin concentrations. It is obvious that in the oral-penicillin-treated group the period of "apenicillemia" did not exceed the injury and recovery phases of the organisms for there were no relapses in this series. Although this series of cases is small, it offers strong support to the contention that susceptible infections can be successfully treated without maintaining constantly a penicillemia in excess of 0.03 units per milliliter.

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SUMMARY

Ninety-three cases of bacterial pneumonia have been treated according to four different therapeutic regimens during the winter of 1949-1950 at the Philadelphia General Hospital. All four forms of therapy—aureomycin, chloramphenicol, and intramuscular and oral penicillin—were considered adequate, and there were no significant differences in the end results. The temperature response was more rapid in the groups receiving intramuscular or oral penicillin.

The patients who were treated with oral penicillin responded well, in spite of the fact that therapy was "discontinuous" from the standpoint of failure to maintain demonstrable plasma concentrations at all times in all patients.

255 S. 17th St. (Dr. Flippin).

LACK OF SPECIFICITY OF PIPEROXAN HYDROCHLORIDE TEST FOR ADRENAL MEDULLARY TUMORS

James E. Conley, M.D.
and
Charles L. Junkerman, M.D., Milwaukee

In the clinical evaluation of hypertensive states, the use of the piperoxan (benodaine*) hydrochloride test [1] for detecting adrenal medullary tumors offered another aid in establishing the presence of such tumors. Green [2] reported that of 51 patients who had proved adrenal tumors, only 14 had the classical paroxysmal type of hypertension. The remaining 37 had sustained hypertension. Thorn, Hindle, and Sandmeyer [3] suggested that each patient with severe hypertension should be investigated for pheochromocytoma, since hypertension may be cured by removing such a tumor. The piperoxan test, with its characteristic lowering of a sustained hypertension, provides a safe blood pressure response in the presence of a tumor. However, our recent experience with two cases has raised some doubt concerning the specificity of this test for pheochromocytoma. The diagnostic test was performed according to the method described by Goldenberg, Snyder, and Aranow.[1]

In Case 1 there was a "positive" response to piperoxan on two occasions, which, in itself, suggested the presence of a tumor; but during autopsy primary pituitary disease was found to be present, and the adrenals showed hyperplasia but no tumor. In Case 2 the piperoxan test was "negative" on three different occasions, and operation revealed a left adrenal pheochromocytoma and a left extra-adrenal pheochromocytoma.

REPORT OF CASES

CASE 1.—A housewife aged 28 was admitted to the hospital on Dec. 4, 1948, for study because of hypertension. She gave a history of known hypertension of one year's duration, which was found at the time of an examination because of ankle edema and dyspnea on exertion. Her symptoms was subsequently controlled by limitation of activities and a low salt diet until one month prior to admission, when severe dyspnea on exertion, orthopnea, and insomnia developed. She was digitalized prior to admission, but with no relief of symptoms.

In addition to this history of hypertension and cardiac failure, the patient was known to have mild diabetes, which was regulated by diet without insulin. Although 28 years old, she had never menstruated nor had she conceived by either of her two husbands, although no contraceptive measures had been used.

Family history revealed that her mother died of hypertensive cerebral vascular disease at age 39. Her father and two sisters were living and well. There was no family history of heart disease, diabetes, tuberculosis, or insanity.

Past history included measles, mumps, whooping cough, scarlet fever, and rheumatic fever. Tonsillectomy was performed at 10 years of age, without complications.

Physical examination on admission revealed a poorly developed but well-nourished woman with ankle edema, and dyspnea at rest. Her admission blood pressure was 220/160, and during her first hospital stay the blood pressure ranged from 160/100 to 230/170. The patient was short in stature with a rather rounded face, a body configuration of a prepuberal female, and undeveloped breasts. There was no axillary or pubic hair. The heart was enlarged. Pulse rate was 120, and regular. Ocular fundi showed multiple small areas of hemorrhage and exudation. The retinal arteries were small with marked variation in caliber of vessels and some edema of the disc, consistent with Grade IV hypertensive retinopathy.

Urinalysis revealed a trace of sugar, albuminuria (100-120 mg. per 100 cc.), and a specific gravity of 1.022. The red blood cell count was 5,400,000; hemoglobin, 16 gm.; hematocrit, 47%. The patient maintained leukocytosis of 17,450-23,900 during hospitalization. The basal metabolism rate was +51, +82, but no clinical signs of hyperthyroidism were present. Fasting blood sugars were 228 mg. per 100 cc., 116 mg. per 100 cc., and 198 mg. per 100 cc. on various occasions. Glucose tolerance revealed a diabetic curve. Blood cholesterol was 365 mg. per 100 cc. and 350 mg. per 100 cc. on two occasions. The diabetes was controlled during the hospitalization with an 1,800 calory diet and 15 to 20 units of insulin daily. The 17-ketosteroid excretion was within normal limits.

The postural and cold pressor blood pressure study revealed a basal lying pressure of 194/140; standing blood pressure of 180/144; and that the patient was a hyper-reactor to the cold pressor test. The blood pressure response to amobarbital (amytal*) sodium sedation test was poor. X-ray examination of the chest with particular reference to the heart revealed moderate cardiac enlargement to the left. Electrocardiogram showed alterations consistent with left ventricular hypertrophy and myocardial changes. The excretory pyelogram was within normal limits. Laminagraphic films of the soft tissue about the adrenal areas showed no evidence of abnormality. X-rays of the skull showed hyperostosis frontalis interna. There was no gross abnormality in the base of the brain and the sella turcica.

A piperoxan test was done using 16 mg. injected intravenously according to the method described by Goldenberg, Snyder, and Aranow.[1] There was a substantial fall in blood pressure (Fig. 1).

From the Hypertensive Service, Columbia Hospital, and the Marquette University School of Medicine.

Aided by grants from the Committee for Scientific Advancement and Education of Columbia Hospital.

The piperoxan (benodaine*) hydrochloride used in these studies was supplied by Dr. R. C. Pogge of Merck & Co., Rahway, N. J.

1. Goldenberg, J.; Snyder, C. H., and Aranow, H., Jr.: New Test for Hypertension Due to Circulatory Epinephrine, J. A. M. A. **135**: 971-976 (Dec. 13) 1947.

2. Green, D. M.: Pheochromocytoma and Chronic Hypertension, J. A. M. A. **131**: 1260-1265 (Aug. 17) 1946.

3. Thorn, G. W.; Hindle, J. A., and Sandmeyer, A.: Pheochromocytoma of Adrenal Associated with Persistent Hypertension: Case Report, Ann. Int. Med. **21**: 122-130, 1944.

The test was repeated two days later under rather similar basal conditions in a quiet room, and the response was also "positive." Although the clinical picture was suggestive of a pheochromocytoma since the patient had hypertension, diabetes, and hypermetabolism, there were obvious endocrine disturbances inexplicable by an adrenal medullary tumor. Adrenal exploration was not performed.

The patient was observed in the outpatient department and hospitalized on three subsequent occasions because of cardiac failure with pulmonary edema and peripheral edema. Her condition gradually deteriorated and she died on Feb. 22, 1950, at which time she had had a sudden episode of midepigastric pain with nausea, vomiting, and circulatory collapse. A clinical diagnosis of arterial mesentery thrombosis was made.

Autopsy findings were (1) generalized arteriosclerosis with coronary sclerosis; (2) chronic arteriolar nephrosclerosis; (3) anterior pituitary adenoma with hypertrophy of both adrenals, hypoplasia of the thyroid, and hypogonadism. A thrombosis of the superior mesenteric artery with infarction of the ileum and jejunum was the immediate cause of death.

CASE 2.—A man aged 46, employed as a factory superintendent, was known to have hypertension for six years. He saw his local physician for the first time because of "attacks" of left back pain, "pounding in the stomach," and tremors. Hypertension was noted and he was given thiamin hydrochloride and phenobarbital sodium. The pressure while under ambulatory treatment varied from 130/80 to 210/110 mm. Hg. In spite of having limited his activities and taking regular doses of phenobarbital, the patient continued to have frequent attacks which were severest during the summer of 1948. These attacks came on insidiously and consisted of transient pain in the left back followed by a sensation of pounding in the abdomen, and the "jitters." The tremor was so marked that he dropped a cup of coffee during a paroxysm. His wife said he "got pale and white as a sheet" following the attacks. However, he experienced no palpitation, hyperhidrosis, or gastrointestinal disturbances during these periods. Blood pressure was never recorded during an attack because the duration was so brief and the onset unpredictable. In September, 1948, he had daily attacks, which forced him to take an unplanned vacation. However, during the vacation he continued to have daily paroxysms.

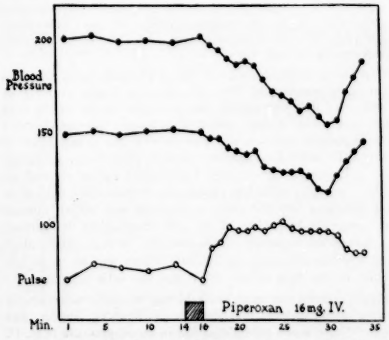

Fig. 1.—Chart showing result of piperoxan test made Dec. 15, 1948, for V. H., aged 28, 1.6 sq. m. of body surface, who by autopsy was found to have had primary pituitary disease and hyperplasia of the adrenals.

When he was examined by his local physician during a routine office visit in January, 1949, his blood pressure was 236/130. He was admitted to a hospital in another city where, after a period of bed rest and sedation, the blood pressure dropped to 190/100. Fasting blood sugar was 196 mg. per 100 cc. Urinalysis and kidney function tests were within normal limits. An electrocardiogram showed tachycardia and changes consistent with hypertensive cardiovascular disease. There was no cardiac enlargement apparent in the chest x-ray. He was started on potassium thiocyanate therapy. Blood thiocyanate levels were kept subsequently between 8 and 12 mg. per 100 cc.

In July, 1949, he began to have pain in his feet which gradually became worse during the following months. The first symptom was a tightness across the instep with considerable swelling of both ankles. Finally the toes became so painful that he was

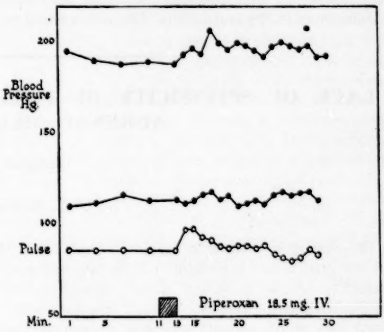

Fig. 2.—Chart showing result of piperoxan test made May 3, 1950, for W. O., aged 46, 1.8 sq. m. of body surface, who at operation was found to have a pheochromocytoma.

unable to spread them apart to dry between them. In December, 1949, x-rays of feet showed bilateral osteoporosis.

Although he had daily attacks during September, 1948, and frequent attacks during the entire year 1948, his condition had improved somewhat in 1949. He had had only two such episodes in that year, one of which occurred in May, and the other shortly after his admission to the hospital. He was referred to the hospital in December, 1949, for study of hypertension and osteoporosis of the feet.

Family history revealed that his mother died at 42 of a "heart attack"; she had had two brothers who died in the fourth decade of life of hypertensive vascular disease. His father had died ae 60 of heart failure associated with aortitis. One sister died at 43 of a pelvic tumor. One brother died at 44, cause unknown. One younger brother was living and well.

The past history was essentially noncontributory except that six years previously he had a traumatic partial amputation of the right finger which had been sutured under general anesthesia with a very satisfactory functional result.

Physical examination revealed a well-developed, well-nourished man complaining of considerable pain and of inability to walk because of pain and swelling of the legs and feet. Examination was essentially normal except for some swelling of both feet, with pain on any active or passive motion of the feet and toes. Pulsations were normal in the major vessels of all extremities. Blood pressure was 220/120 on admission. Pulse rate was 100.

Urinalysis on three successive days showed slight albuminuria and microscopic hematuria. Red cell count was 4,640,000; hemoglobin, 14.2 gm.; white blood cell count was 7,200 with 61% polymorphonuclear cells and 35% lymphocytes. Sedimentation rate was 18 mm. in one hour. The nonprotein nitrogen value was 58 on admission, but after several days it dropped to 41. Blood calcium was 12 mg. per 100 cc.; phosphorus 4 mg. per 100 cc., and phosphatase 3.3 Bodansky units. Uric acid was 5.6 mg. per 100 cc. The thiocyanate level was 10 mg. per 100 cc. Fasting blood sugar was 118 mg. per 100 cc. and 122 mg. per 100 cc. Glucose tolerance tests on two occasions were within normal limits. Basal metabolism rate was +16 and +22 on two occasions. X-ray studies of the chest showed no evidence of cardiac enlargement. X-ray studies of the skull, spine, and hands showed no abnormalities. Intravenous pyelogram was interpreted as within normal limits except for three renal calculi in the left kidney.

X-rays of both feet and ankles showed marked bone atrophy, Sudeck's type. The greatest loss of calcium was in the proximal and distal ends of the long bones of the feet. There was no evidence of osteomyelitis, or old or recent injury, and there was nothing to suggest the presence of gout. The reasons for the acute bone atrophy were not apparent in the x-ray. It was thought to be a toxic manifestation of potassium thiocyanate, which therapy was promptly discontinued, and daily intravenous procaine therapy was begun.

Blood pressure during hospitalization ranged from 300/160 to 180/100. The highest pressure of 300/160 was obtained during the night when the patient was awakened by acute nervousness. The average basal blood pressure in the postural and cold pressor test was 177/105; standing 176/117. The patient was not a hyper-reactor to the cold pressor test. The blood pressure fell to 132/96 after amobarbital sodium sedation. The piperoxan test was made on three different occasions, in December, 1949, again in April, 1950, and prior to surgery in May, 1950. On all these occasions a "negative" response was obtained. The most recent response is shown in Fig. 2.

Sympathectomy was contemplated, but deferred during the first hospitalization in December, 1949, because of the bone atrophy, which was presumed to be osteoporosis secondary to thiocyanate therapy. Procaine was administered intravenously, and resulted in gradual clinical improvement. The patient was admitted for surgery in May, 1950. Admission blood pressure was 210/112; pulse rate, 88. He had been well and active prior to admission with minimal symptoms referrable to his feet. Ocular fundi showed Grade II hypertensive changes.

An electrocardiogram made on May 8, 1950, showed changes consistent with left ventricular hypertrophy. X-rays of both feet and ankles showed some residual bilateral osteoporosis. A flat film of the abdomen showed three rounded areas of calcific deposits, which had the appearance of kidney stones, lying over the left kidney, in the lower pole calix. Otherwise, the x-ray was interpreted as negative.

Laboratory studies revealed a fasting blood sugar of 118 mg. per 100 cc.; nonprotein nitrogen, 45; creatinine, 210 mg. per 100 cc.; phosphorus, 3.8 mg. per 100 cc.; calcium, 13.2 mg. per 100 cc.; thiocyanate, 2.5 mg. per 100 cc. Urinalysis revealed microscopic hematuria. Phenolsulfonphthalein excretion was 30% in 15 minutes and 82% in two hours. Examination of the urine showed 4+ calcium as determined by the Sulkowitch test. Urea clearance was 68% of normal. Sedimentation rate was 34 mm. in one hour. Basal metabolism rate was +18.

On May 9, 1950, a left thoracolumbar exploration was performed through the bed of the resected portion of the 11th rib

Fig. 3.—Cross section of the tumor removed in Case 2. One section was stained with ferric chloride for chromaffin tissue.

for a distance of about 10 cm. A left adrenal tumor weighing 100 gm. which measured 12 by 6.5 by 3.5 cm. was removed. In addition, an extra-adrenal pheochromocytoma measuring 3.2 by 3.3 by 2.4 cm., found near the hilum of the kidney, was also removed. An incidental finding was renal cell carcinoma of the upper pole of the left kidney, so a left nephrectomy was performed. The addition of ferric chloride (10%) to portions of the adrenal and kidney tumors turned the adrenal tumor a dark green but did not affect the color of the kidney tumor. In addition to the renal tumor, four dark reddish brown, smooth stones which averaged 0.3 cm. in diameter were found in the inferior calyces of the kidney. The patient made an uneventful recovery, and he was discharged on May 20, 1950. The adrenal medullary tumor and extradrenal tumor were typical pheochromocytomas (Fig. 3 and 4).

Fig. 4.—Photomicrograph of pheochromocytoma (Case 2) near junction with normal adrenal cortical tissue.

The patient has been well and active and without any symptoms since his discharge from the hospital. His blood pressure remains somewhat elevated, ranging from 160/100 to 185/110 on ambulatory studies.

SUMMARY

Two cases in which the piperoxan test was used in evaluating hypertensive problems are presented. In one case of primary pituitary disease, a "positive" piperoxan test was obtained. In the second case a "negative" response was obtained in a patient who, at operation, proved to have pheochromocytomas. A false "negative" response may have been obtained at a time when there were no circulating epinephrine and norepinephrine (arterenol®), and the hypertension was sustained by a secondary mechanism.

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Theory and Practice.—It is not uncommon to hear a doctor . . . assert that he is a practical man with no time for theories. He fails to realize that his practice is based on theories elaborated by his predecessors; and certainly he would not recognize the fact that his distaste for theories is really a confession of his inability to adapt himself mentally to changing points of view. . . . Thomas Henry Huxley said that "the practical man is the man who practices the errors of his forefathers." . . . My present thesis is that the most important element in medical education is theory, not practice. All practice . . . is based on some sort of theory. . . . Given good theory any reasonably adept person can be taught good practice, but without sound theory practice is misdirected and may become positively dangerous. . . . The bedside is the clinician's laboratory and provides in addition the ultimate test for any medical theory. A tremendous amount of valuable observation has been gained from that source. But while it remains only observation it is still purely empirical. Before such facts can be woven into fruitful scientific theory they must be sorted in various combinations, checked experimentally against working hypotheses in the laboratory, and finally verified at the bedside once again under properly controlled conditions.—A. A. Abbie, The Academic Aspect of Medical Education, *Medical Journal of Australia*, June 9, 1951.

THROMBOEMBOLIC COMPLICATIONS ASSOCIATED WITH ACTH AND CORTISONE THERAPY

Stuart W. Cosgriff, M.D., New York

An increased coagulability of the blood has been noted in the hyperadrenal state induced by the therapeutic administration of corticotropin (ACTH) and cortisone. This state of hypercoagulability may persist for as long as three weeks after cessation of therapy with these agents.[1] When these coagulation changes were reported in 1950, reference was made to 11 instances of thromboembolism which had been observed in association with the use of corticotropin or cortisone.[1] Smith and others[2] have also observed alterations of the coagulation mechanism during hormonal therapy. In addition, thrombotic phenomena, noted clinically or at autopsy, have been remarked on by Schick and his associates,[3] by Sharnoff and others,[4] by Bongiovanni and Eisenmenger,[5] and by Coste and his co-workers.[6]

Over the period of the last two years it is estimated that approximately 700 patients have received corticotropin or cortisone therapy at Presbyterian Hospital. Among this group of patients there have now been 28 patients who have experienced one or more thromboembolic complications, a total of 40 episodes. It is the purpose of the present report to analyze the relationship of these thromboembolic processes to the hormonal therapy.

CLINICAL ANALYSIS

The clinical data concerning these patients with thromboembolic complications are presented in Tables 1 and 2. There were 15 patients in the group who received corticotropin and 13 who received cortisone.

Sex.—Sixty-four per cent of the entire group were females, the occurrence in females being somewhat more frequent in the cortisone group.

Age.—Seventy-five per cent were between 40 and 79 years of age, the age range in which clinical thrombotic disease is usually encountered.

Activity.—Of these 40 thromboembolic episodes, 19 (47.5%) occurred while the patients were confined at bed-rest, several patients being in the postoperative or postpartum period; eight (20%) occurred while the patients were semi-ambulatory and partially restricted in their activity; 13 (32.5%) occurred during a period of normal activity.

Associated disease process.—The diseases for which hormonal treatment was being given were disorders usually considered indications for such therapy (Tables 1 and 2). Twelve of the 28 patients received their therapy because of rheumatoid arthritis. In addition, some patients were already suffering with such potentially

TABLE 1.—*Thromboembolic Complications Associated with Cortisone Therapy*

Case, Age, Sex	Clinical Diagnosis	Duration of Cortisone Therapy in Days	Thromboembolic Complications	Occurrence of Thromboembolic Complication: Day of Cortisone Administration	Occurrence of Thromboembolic Complication: Days After Cortisone Administration
1 57 F	Dermatitis Abscess on buttocks	19	Phlebothrombosis external saphenous vein	..	4
2 31 M	Ulcerative colitis	3	Massive pulmonary embolism—died	3	..
3 65 F	Rheumatoid arthritis	42	Superficial thrombophlebitis Deep thrombophlebitis, right lower extremity	.. ..	3 3
4 43 F	Pemphigus	4	Thrombophlebitis, internal saphenous vein	4	..
5 60 M	Osteoarthritis	13	Deep phlebothrombosis, posterior tibial and popliteal vein	..	3
6 70 F	Osteoarthritis (postoperative)	7	Pulmonary embolism	..	10
7 48 F	Psoriasis arthropathica	180	Thrombophlebitis, internal saphenous vein	180	..
8 70 M	Rheumatoid arthritis	180+	Cerebral vascular accident: ? thrombosis ? hemorrhage	180+	..
9 69 F	Rheumatoid arthritis	90	Cerebral thrombosis	90	..
10 74 F	Rheumatoid arthritis Pneumonia	255	Pulmonary embolism Thrombophlebitis, internal sephenous vein Phlebothrombosis, deep calf veins Pulmonary embolism Pulmonary embolism Cardiac infarction	.. ..	7 8 10 11 17 ..
11 57 F	Osteoarthritis (hip) Postoperative arthroplasty	23	Pulmonary embolism Thrombophlebitis, right deep calf vein	23 ..	.. 3
12 49 M	Rheumatoid arthritis	170	Thrombophlebitis, right deep calf	170	..
13 65 F	Uveitis	8	Superficial phlebothrombosis	8	..

From the Department of Medicine, College of Physicians and Surgeons, Columbia University, and Presbyterian Hospital.

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thrombotic predisposing conditions as diverticulitis, infected and poorly healing wounds, ulcerative colitis, subcutaneous abscesses, and viral pneumonia. Moreover, four of the group gave a history of having previously experienced an episode of thrombosis, three of them recently.

TABLE 2.—*Thromboembolic Complications Associated with Corticotropin (ACTH) Therapy*

Case, Age, Sex	Clinical Diagnosis	Duration of ACTH Therapy in Days	Thromboembolic Complications	Occurrence of Thromboembolic Complication: Day of ACTH Administration	Occurrence of Thromboembolic Complication: Days After ACTH Administration
1 60 F	Rheumatoid arthritis Diverticulitis	54	Pulmonary embolism	54	..
2* 16 F	Nephrosis	5	Thrombophlebitis, internal saphenous vein	5	..
3 42 F	Scleroderma	4	Pulmonary embolism	4	..
4 23 F	Postpartum Disseminated lupus erythematosus	18	Multiple pulmonary emboli—died	18	..
5* 16 F	Nephrosis	7	Thrombophlebitis, femoral and popliteal vein	..	16
6 64 M	Rheumatoid arthritis	8	Cardiac infarction	..	28
7 55 M	Pemphigus	11	Radial artery thrombosis ? Mesenteric thrombosis	11 ..	.. 5
8 46 M	Recent thrombophlebitis Hives reaction to penicillin	2	Thrombophlebitis, femoral vein	..	6
9 43 M	Rheumatoid arthritis	5	Phlebothrombosis, deep calf and popliteal vein	..	7
10 24 F	Pulmonary fibrosis ? Sarcoidosis	8	Bilateral thrombophlebitis, deep calf veins Pulmonary embolism	8 ..	.. 5
11 17 F	Rheumatoid arthritis	15	? Hepatic vein thrombosis	15	..
12 45 M	Amyotrophic lateral sclerosis	14	Pulmonary embolism	7	..
13 50 M	Lymphoma Radiotherapy	16	Superficial thrombophlebitis, right arm Phlebothrombosis, right internal saphenous vein	5 ..	.. 5
14 31 F	Rheumatoid arthritis	230	Pulmonary embolism	..	5
15 49 F	Rheumatoid arthritis	16	Pulmonary embolism Pulmonary embolism Pulmonary embolism	16	.. 1 6

* Cases 2 and 5 represent the same patient during different admissions to the hospital at an interval of 2 months.

Thromboembolism.—Twenty thromboembolic episodes occurred in the cortisone group and an equal number in the corticotropin-treated patients. In Table 3 an analysis of the types of thromboembolism encountered in these 28 patients is presented. Of unusual interest is the frequency of occurrence of superficial venous thrombosis (nine episodes), deep venous thrombosis (nine episodes) and pulmonary embolism (15 episodes). Two patients died of fatal pulmonary embolism, confirmed at autopsy; a third died during an acute cardiac infarction; and yet another as a result of a cerebral vascular accident.

Nineteen of the 28 patients had received corticotropin or cortisone for less than three weeks, two for as short a period as two and three days. On the other hand, three patients had received cortisone for approximately six months prior to the thrombosis, and one patient had received corticotropin for the preceding nine months.

Eighteen (45%) of the thromboembolic bouts occurred while the patients were receiving the agents, while 22 (55%) episodes occurred after the therapy had been discontinued.

Among the 18 patients who were receiving corticotropin or cortisone at the time of the thromboembolism, in 12 (66.6%) thrombosis or embolism developed within the first three weeks of therapy.

Of the 10 patients in whom corticotropin or cortisone therapy had been terminated prior to development of thromboembolism, complications developed in seven (70%) within one week of stopping therapy and in an additional patient during the second week following therapy.

TABLE 3.—*Analysis of Forty Thromboembolic Complications Associated with Corticotropin (ACTH) or Cortisone Administration*

	Total	ACTH	Cortisone
Superficial thrombophlebitis or phlebothrombosis	9	3	6
Deep thrombophlebitis or phlebothrombosis	9	4	5
Pulmonary embolism	15	9	6
Cardiac infarction	2	1	1
Miscellaneous	5	3	2
Radial artery thrombosis	(1)*	(1)	..
Mesenteric thrombosis	(1)	(1)	..
Hepatic venous thrombosis	(1)	(1)	..
Cerebral vascular accident	(2)	..	(2)
Total	40	20	20

* The figures in parentheses are included in the miscellaneous group.

Type of Cortisone.—Among the patients receiving cortisone, the parenteral preparation had been used exclusively in 10, the oral in two, and both the oral and parenteral preparation in one.

Dosage of Corticotropin and Cortisone.—The majority of patients (79%) were receiving cortisone in an average daily dose of 50 to 100 mg., and corticotropin in an average daily dose of 40 to 80 mg. per day.

Only two of the cortisone-treated group received in excess of 100 mg. daily, one woman being given 200 mg. (parenterally) and one man 125 mg. (orally) each day. Only one patient was given corticotropin in dosage exceeding 100 mg. daily; this woman received 200 mg. (in divided doses) daily, and experienced a pulmonary embolus on the fourth day.

Three of 13 cortisone-treated patients were receiving small amounts of the hormone: two were receiving 300 mg. (parenterally) once weekly and one was receiving 200 mg. twice weekly by the parenteral route. Two of the 15 corticotropin-treated patients received as small a total dose as 20 and 25 mg. daily of the hormone.

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COMMENT

The present study indicates the frequency of thrombotic and embolic accidents in patients receiving corticotropin (ACTH) or cortisone. Many of these patients were ill with disease which may have predisposed them to intravascular clotting. The possibility exists that the thromboembolic complications observed in association with corticotropin or cortisone therapy were more closely related to the underlying diseases than to the hormonal agents employed. Admittedly, comparative statistics which would indicate the relative incidence of thrombotic phenomena in a similar group of patients without hormonal therapy are unavailable. Nevertheless, the occurrence of 40 thromboembolic episodes in 28 patients from among the approximate 700 patients who have received corticotropin or cortisone treatment appeared greater than expected. This is particularly so when consideration is given to the known effect of these agents in producing hypercoagulable changes in the clotting mechanism of the blood.[1]

The question arises as to whether the thromboembolic complications were associated directly with the hyperadrenal state and continuing hormone therapy or consisted of another manifestation of the rebound phenomena observed following withdrawal of therapy. The number of the complications were relatively evenly distributed with respect to the time of the complication and administration of the corticotropin or cortisone, 45% occurring during therapy, and 55% after discontinuation of therapy. However, in 18 of the 28 patients the initial thromboembolic manifestation occurred in the course of hormonal therapy. Furthermore, with the knowledge that the hypercoagulable changes observed in the clotting mechanism may develop as soon as 48 hours following start of hormonal therapy and may persist for as long as three weeks following discontinuance of treatment with these agents, it seems most likely that they are more closely associated with the actual state of hyperadrenalism. It seems possible that the thromboembolic episodes occurring after termination of hormonal therapy might still result from persisting hyperadrenalism.

An apparent correlation exists between the thromboembolic complications and the dosage of corticotropin or cortisone. Eighty-two per cent of these vascular complications occurred among patients who had received "full dosage." A similar relation between dosage and the degree of the hypercoagulable changes was noted in previous studies.[1] Thus, from the viewpoint of the possible complications of intravascular clotting, the employment of the smaller "sub-optimal dosage" of cortisone and corticotropin, would appear to be safer.

In view of the tendency for these agents to inhibit the inflammatory response,[7] the patients with venous thrombosis were studied with respect to correlating the type of thrombosis (bland phlebothrombosis or inflammatory thrombophlebitis) with the time of administration of the agents. Among eight episodes which occurred during active therapy, six were inflammatory in nature and only two were remarkable for the bland nature of the thrombosis. Similarly, of the 10 episodes which occurred after hormone administration was stopped, six were inflammatory. In like manner, of the 15 episodes of pulmonary embolism, seven occurred while hormonal therapy was being given and eight took place after the hormone administration had been stopped. Thus, it does not appear that the administration of these agents alters significantly the usual inflammatory fixing reaction which occurs in and around a vessel wall secondary to the presence of the clot within the lumen.

Thrombotic complications appear to be more likely to develop in persons with underlying vascular disease or with a history of previous thromboembolic disease. Indeed, in this study, four patients who gave a history of previous venous thrombosis or pulmonary embolism exhibited recurrences of that type of thrombotic problem at the time of corticotropin or cortisone administration. Therefore, should hormonal therapy become indicated in such thrombophilic individuals or in patients with serious vascular disease, prophylactic anticoagulant therapy might be employed beneficially during and for several weeks following termination of treatment. However, it is of interest to note that three of the present group were given subsequent hormonal therapy without recurrent thrombotic complication.

SUMMARY

Among approximately 700 patients treated with corticotropin (ACTH) or cortisone, in 28 patients there have been 40 episodes of thromboembolic disease which have developed during or shortly following hormonal therapy. These vascular complications, together with the observations of hypercoagulability of the blood associated with the administration of these agents, indicate that thromboembolic phenomena should be considered as one of the serious complications of corticotropin and cortisone therapy.

620 W. 168th St.

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Federal Medical Services.—The costs of Federal medical programs are running at the rate of two billion dollars a year and may climb much higher in the near future. . . . Five large and over 30 smaller Federal medical systems are operated completely independent of each other. They go their own ways, make their own plans, build, staff, and run hospitals and clinics with, as the Commission said, little knowledge of and no regard for the operations of the others. In other words, there is simply no central direction or organization. The whole thing is running on a helter-skelter basis. . . . There are still many places in the country today where Federal hospitals are standing half staffed or half empty, or, in some cases, totally empty, while others are being built. . . . The lowest cost (per bed) in Federal hospitals is still 33⅓% above voluntary hospitals and the average is 133% higher.—Quoted from the Hoover Commission's Report in an address on "How We Can Get Better Federal Medical Services," by R. C. Page, *Industrial Medicine and Surgery*, August, 1951.

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CORTISONE THERAPY IN SARCOIDOSIS

EFFECT IN A CASE WITH VIRTUAL BLINDNESS

Louis E. Siltzbach, M.D., Adolph Posner, M.D.
and
Myer M. Medine, M.D., New York

There is no known specific treatment for sarcoidosis. The present report is concerned with the successful use of intramuscularly administered cortisone in a case of generalized sarcoidosis with extensive and severe bilateral ocular involvement. The patient's vision had deteriorated steadily over a seven months' period in spite of conventional therapy at two ophthalmological institutions, and when she presented herself for admission to Montefiore Hospital she was almost blind. From the first day of treatment the patient's vision improved, and when cortisone therapy was discontinued she had 76% of normal binocular vision and was able to resume all her usual daily activities. Of further interest was the substantial shrinkage of enlarged mediastinal nodes, which occurred during the first month of cortisone therapy and was still sustained six months after therapy has been discontinued.

REPORT OF A CASE

P. D., a Negro housewife aged 30, was admitted to the ophthalmological service of Montefiore Hospital on April 5, 1950, nine months after the onset of her symptoms. The family and past histories were noncontributory, except for an episode of nonproductive cough in February, 1949, when a chest roentgenogram failed to disclose any abnormalities. Her illness began in July, 1949, when she noted a rash on her right knee. This spread to involve the extensor surfaces of both legs. There was generalized weakness, and she had lost 20 lb. (9.1 kg.) in weight in the preceding six months. In September, 1949, she experienced blurred vision and visited an eye clinic. Her vision was found to be 20/50 in the right eye and 20/40 in the left eye. A diagnosis of bilateral uveitis was made, and she received an intramuscular injection of 5 cc. of milk without improvement.

One month later she noted "rainbow" halos, and her vision became progressively worse. She entered another hospital on Oct. 8, where the uveitis was found to be complicated by secondary glaucoma. A chest roentgenogram now revealed enlargement of the mediastinal lymph nodes. The tuberculin test was negative in a dilution of 1:1,000 old tuberculin (OT). This combination of findings—uveitis, mediastinal lymph node enlargement, and a negative tuberculin test—led to a clinical diagnosis of sarcoidosis. Since there were no enlarged peripheral lymph nodes available for biopsy and the macular erythematous rash faded during the patient's first week in hospital, a Nickerson-Kveim [1] intradermal test for sarcoidosis was performed at two sites on the forearm. After four weeks both sites were strongly positive on gross examination, which fact confirmed the diagnosis of sarcoidosis. A study of aspirated fluid from the anterior chamber of the right eye revealed mononuclear cells with pyknotic nuclei as seen in chronic uveitis. The right axilla was explored, and a small lymph node was removed, which showed no significant abnormality.

The patient was treated with three courses of typhoid vaccine with a reduction of the ocular tension. She was discharged from the hospital on Nov. 11. Her condition grew worse, and early in January, 1950, she could no longer see a motion picture image clearly. During the next three months vision deteriorated to the point of virtual blindness.

Physical Examination.—There was no recurrence of the rash. At the sites of the six-months-old Nickerson-Kveim intradermal tests on the right forearm, there were two brownish, considerably raised papules measuring 9 mm. and 6 mm., respectively, in diameter. Portions of these were excised, and they revealed the typical sarcoid-like structure of a positive test (Fig. 1). A chest roentgenogram confirmed the presence of enlarged lymph nodes in both hilar areas and in the right paratracheal region (Fig. 2A). Some of these nodes narrowed the middle third of the esophagus by pressure.

Eye Status.—The best vision in the right eye was finger counting at 5 ft. (152.4 cm.); in the left eye the vision was limited to hand movements only. She could not see the examiner, nor could she recognize any objects about her. The ocular tension and motility were normal. In both eyes the episcleral vessels were dilated and there was a ciliary flush. The cornea of the right eye was almost completely opaque in the inferior temporal

Fig. 1.—Microscopic appearance of a section of skin taken from the Nickerson-Kveim intradermal test area. The cutis is permeated by epithelioid cell granuloma with giant cells. No caseation is present. The appearance is similar to that of naturally occurring sarcoidosis of the skin except for the presence of more inflammatory cells here (× 110).

zone and in the pupillary area. In the left eye, the opacities were somewhat more discrete and involved the lower half of the cornea (Fig. 3A). There were no nodules in the iris. The pupils were dilated by atropine. The view of the fundi was hazy, owing partly to a cloudy vitreous. A red reflex was present, however, and occasional retinal vessels could be discerned.

This work was done under a grant from the Henry L. Moses Fund.
From the Division of Pulmonary Diseases and the Ophthalmological Service of Montefiore Hospital.

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Slit-lamp examination showed the following:

The right eye had deep corneal infiltrates and vascularization near the lower limbus at 7 o'clock. There were smaller infiltrates near the center of the cornea, but these were not vascularized. The posterior surface of the cornea was studded with unpigmented keratic precipitates. The angle was free, and the anterior chamber was deep. The lens was clear. In the left eye

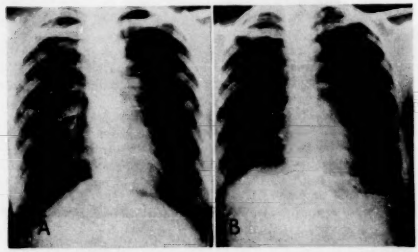

Fig. 2.—Chest roentgenograms taken *A*, May 3, 1950, two days before cortisone therapy was begun; and *B*, June 5, 1950, after one month of therapy, showing complete regression of the enlarged right hilar and right paratracheal nodes and shrinkage of the left hilar nodes.

the picture was similar, but the keratic precipitates were more numerous and the deep vessels extended into the cornea from the temporal limbus.

Laboratory Tests.—The tuberculin test was carried to 1:100 dilution of OT with a negative result. The blood count and urinalysis were within normal limits. The erythrocyte sedimentation rate was 22 mm. at the end of one hour (Westergren). There was no serologic evidence of syphilis or brucellosis. The serum albumin was 4.8 gm. and the globulin was 2.6 gm. per 100 cc. Other blood determinations included that of glucose, carbon dioxide combining power, urea, uric acid, creatine, creatinine, sodium, potassium, calcium, phosphorus, and alkaline phosphatase; all of these were within normal range. The electrocardiogram was also of a normal pattern.

Fig. 3.—Photographs showing appearance of eyes *A*, before cortisone therapy, and *B*, after 15 weeks of intramuscular cortisone. The clearing of corneal opacities can be noted. Some scarring remains.

During 30 days of observation in the hospital the patient's visual acuity further diminished till it was limited in each eye to hand movements.

Drug Schedule.—After preliminary electrolyte and nitrogen balance studies, intramuscular treatment with cortisone was started on May 5. The patient received the drug daily for 15 weeks with a total dosage of 13.7 gm. For the first three weeks the daily dose was 150 mg. This was reduced to 100 mg. for the fourth and fifth weeks. During the sixth and seventh weeks, because of a shortage of drug, she received first 75 mg. daily, then 50 mg. From the 8th to the 15th week she again received 150 mg. daily, and in the final week the dosage was tapered off. There were few of the usual side effects in spite of the high dosage and the long duration of cortisone therapy.

Some rounding of the face and mild acne were noted after the third week, and purplish striae were present in both popliteal areas during the last week. There was no evidence of sodium or fluid retention while the patient was on a low sodium diet, nor was there evidence of hypopotassemia or hypochloremic alkalosis. During the first few weeks the patient was in a state of negative nitrogen balance, but this was corrected by a liberal diet. The circulating eosinophil count which had been 242 per cubic millimeter dropped promptly, and ranged between 33 and 88 per cubic millimeter while the patient was receiving the drug. She had a voracious appetite and gained 26 lb. (11.8 kg.), most of it during the last six weeks of therapy.

Effects on the Sarcoidosis Lesions.—The Eyes: Cortisone produced a dramatic effect on the patient's visual acuity (Fig. 4). After one day's treatment she could count fingers at 2 ft., and she recognized the interne's white clothes. A week later she was able to see green trees 50 ft. (15.2 m.) outside her window. On the 10th day she could count fingers at 12 ft. (3.7 m.), and by the 12th, her vision was 10/200 in the right eye and 20/200 in

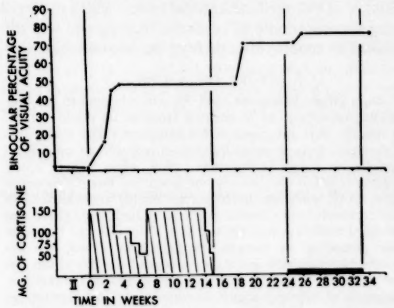

Fig 4.—Chart showing binocular percentage of visual acuity under cortisone therapy. (Visual efficiency ratings are in accordance with the Standard Method approved by the Section on Ophthalmology of the A. M. A., June, 1940.) The vertical lines indicate the beginning and end of first, intramuscular and then, topical therapy. Major improvement in vision during first four weeks of intramuscular cortisone therapy can be noted.

the left eye—or a binocular vision of 16% of normal—and for the first time she walked about the ward unaided. By the 16th day the patient was reading large type in newspapers, and her vision measured 20/100 in the right eye and 20/150 in the left eye, or 45% of normal. At the end of the fourth week her vision in each eye was 20/100, or 49%, and this did not change for the remaining 11 weeks of treatment. Towards the end she attended a motion picture in the hospital, and she stated that the images appeared clear.

Objective changes were noted on the 10th day, and the ocular abnormalities regressed week by week. During the second week the scleral and ciliary injection disappeared in both eyes and the deep vessels in the cornea began to be thinner; by the end of the third week the vessels had become attenuated almost to the point of invisibility. This suppression of the neovascularization continued throughout the period of therapy. The keratic precipitates diminished early in the third week. By the fourth, none could be found in the right eye. About 30 were still present in the left eye, but these were smaller and more pigmented than they had been, indicating that the uveitis was subsiding here as well. After the fourth week the cornea grew steadily clearer as a result of shrinkage of the opacities and a decrease in their density (Fig. 3B). Two small posterior synechiae in the right eye and one in the left were then noted. Finally, the clouding of the

vitreous responded. In the ninth week a relatively clear view of the fundus could be obtained. The posterior poles of the fundi had a greyish appearance suggesting macular edema, and the foveae had irregular contours. These macular changes are believed to account for what visual impairment remained.

Changes in Roentgen Appearance of Enlarged Mediastinal Lymph Nodes.—Before treatment there was enlargement of the lymph nodes in both hilar areas and in the right paratracheal region. The largest group of nodes was seen in the left hilar area (Fig. 2A). Evidence of shrinkage occurred on about the 10th day and affected almost equally all three groups of nodes. The regression continued, and after one month no enlargement of the nodes at the right hilar area and right paratracheal region was detectable. There were still some enlarged nodes at the left hilar region, but these appeared to be less than half their pretreatment size (Fig. 2B). The nodes on the right did not reappear, and those at the left hilar area remained diminished in size thereafter.

Course Following Cessation of Intramuscular Treatment.—For three weeks after cessation of the drug the eye status remained unchanged. Then the patient suffered a mild exacerbation of her uveitis. There was a moderate increase in the keratic precipitates in both eyes. In spite of this, her corneal opacities did not increase in size or density, and her visual acuity showed a further improvement to 20/50 in the right eye and 20/60 in the left, or 71% of normal. Some of this improvement may be ascribed to discontinuation of atropine drops at the time. The patient had been receiving a 1% solution of this drug, one drop in each eye, twice daily since her admission to the hospital. Her uveitis remained relatively quiet until the 10th week, at which time she began to lose a little ground. Vision in the left eye dropped to 20/100. However, the right eye still had 20/50 vision, giving the patient a binocular vision of 69% of normal. The vitreous of the left eye was again cloudy, obscuring the fundus. The keratic precipitates increased in number in both eyes, but the corneal vascularization remained minimal.

In view of reported successes in some eye conditions with topical cortisone, the recurrence was treated in that manner. Cortisone drops in a 1:4 dilution of isotonic saline (6.25 mg. per cc.) were instilled in each eye every hour by the patient during her waking hours. After one week of this regimen there was definite improvement. The vitreous of the left eye again became clear and the keratic precipitates diminished. Visual acuity improved to 20/50 in both eyes, or 76% of normal. Thereafter, regression of the corneal opacities continued. The patient had, in all, nine weeks of topical therapy.

At the time this report was written, the patient had been under observation for six months following cessation of intramuscular cortisone therapy. The shrinkage of the lymph nodes had been sustained. The patient was able to attend to her household duties and had resumed all her usual activities without limitation. The effect of discontinuing the cortisone drops is being observed.

COMMENT

Levitt [2] has reported on the serious prognosis of uveal involvement in sarcoidosis. In a review of 100 collected cases of generalized sarcoidosis, he found 28 with uveitis. In10 of the patients phthisis bulbi developed. It was bilateral in seven. The extent and severity of the lesions in this patient made it likely that with conventional therapy, loss of vision might be permanent. The lesions had not quite reached the end-stage of extensive scarring, but scarring was noted. Many inflammatory components of ocular sarcoidosis, such as serous and plastic exudates and corneal infiltrations with vascularization, were still present. These were effectively suppressed by cortisone, and this action brought about the patient's dramatic recovery of vision. The shrinkage of the mediastinal lymph nodes suggests that the tuberculoid granulomata also were affected.

The drug acted on the ocular lesions promptly, but reached its peak effect more slowly than it does in some other responsive diseases. Thus, deterioration of vision, which had been going on unremittingly for five months, stopped on the very first day of treatment, although objective improvement in the lesions could not be detected until the second and third weeks. The enlarged mediastinal lymph nodes showed their greatest shrinkage only after one month.

Intramuscular therapy was continued for a longer period and with a higher dosage than is now usual, particularly in eye diseases. Since there was continuous improvement in both the ocular and lymph node lesions during the first month, and the vitreous showed progressive clearing as late as the ninth week, we went on giving the drug to see if all the residual lesions could be made to resorb. This was not accomplished. At the end of 15 weeks of intramuscular therapy, there were still some corneal scarring, a quiescent uveitis, and some residual enlargement of lymph nodes at the left lung root. Six months after intramuscular therapy was discontinued, the lymph nodes had not again enlarged.

The drug's efficacy was also shown by the fact that cortisone eye drops promptly brought to quiescence a mild exacerbation of the uveitis.

Cortisone may prove to be a useful adjunct in the treatment of sarcoidosis, especially when there is ocular involvement. Further observation will show whether or not this patient's experience was exceptional. The drug seems to offer promise in the prevention of the disastrous sequelae caused by the excessive scarring that often characterizes the natural healing of sarcoidosis.

SUMMARY

A case of sarcoidosis with severe bilateral ocular involvement and enlargement of mediastinal lymph nodes was treated with intramuscular cortisone for 15 weeks. The ocular lesions were of eight months' duration, and, in spite of conventional treatment, the patient's vision had deteriorated to a point where she had to be led into the hospital. Vision improved from the first day of cortisone therapy, and this was reflected in objective changes in the eyes which became apparent during the third to the ninth week. Mediastinal lymph node shrinkage began on the 10th day, and after one month there was only residual enlargement of the nodes at one lung root. A mild exacerbation of the uveitis occurred three weeks after intramuscular therapy was discontinued, but topical therapy in the form of cortisone eye drops promptly controlled it. Some corneal scarring and quiescent uveitis remained. The lymph node enlargement did not recur during the six months of subsequent study. When the patient was discharged from the hospital, she was able to resume her usual daily activities. At the time this report was written the patient had 76% of normal binocular vision.

1097 Madison Ave. (Dr. Siltzbach).

2. Levitt, J. M.: Boeck's Sarcoid with Ocular Localization: A Survey of the Literature and Report of a Case, Arch. Ophth. **26**: 358-388 Sept.) 1941.

CORTISONE THERAPY OF BOECK'S SARCOID

Francis J. Lovelock, M.D.
and
Daniel J. Stone, M.D., New York

Boeck's sarcoid is an inflammatory response to an unknown agent. As ordinarily seen and diagnosed in hospital practice, it is a chronic granuloma without significant necrosis. When the pulmonary disease has existed for a prolonged period, one may find organization of the lesions with peribronchial fibrosis and resultant emphysema.[1]

A fairly acute form of sarcoid with pulmonary lesions is clinically recognized, and it is sometimes accompanied by phenomena such as eosinophilia and erythema nodosum.[2] These findings suggest an exudative type of lesion. The exact pathology in this phase has not been studied.

The commoner type of pathologic process seen in sarcoid is a noncaseating granuloma with a tendency toward tubercle formation. In ordinary practice the clinical diagnosis is usually confirmed by the finding of this type of lesion in a peripheral lymph node or, less frequently, by liver or skin biopsy. When in such cases pulmonary lesions and enlarged mediastinal lymph nodes are present also, it is assumed that there is a similar pathological process in those areas. Although granulomatous lesions have been observed frequently at necropsy in the mediastinal nodes and lungs, in a large majority of clinical cases no histological confirmation of the pulmonary lesion is obtained. Thus, it is theoretically possible for a peripheral node to show a well-organized granuloma and the pulmonary tissue to show an exudative lesion. These various possibilities must be considered in the interpretation of the response of Boeck's sarcoid to any treatment, whether it is a drug or bedrest.

Ragan's [3] observations on the effect of corticotropin (ACTH) on granulation tissue suggested to our group that cortisone might be of value in the therapy of Boeck's sarcoid. A series of studies has been undertaken, and it is the purpose of this paper to report the preliminary observations on two patients treated for sarcoid with cortisone. It is thought particularly worthwhile to report so small a group because of what we feel have been striking changes and because of doubt expressed as to the usefulness of cortisone and corticotropin in the management of sarcoid.[4]

From the Medical Service of the Bronx Veterans Administration Hospital.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

1. Zimmerman, I., and Mann, N.: Boeck's Sarcoid: A Case of Sarcoidosis Complicated by Pulmonary Emphysema and Cor Pulmonale, Ann. Int. Med. **31**: 153 (July) 1949. Spain, D. M.: Patterns of Pulmonary Fibrosis as Related to Pulmonary Function, ibid. **33**: 1150 (Nov.) 1950.

2. Crawley, F. E.: Erythema Nodosum as Initial Manifestation of Boeck's Sarcoidosis, Brit. M. J. **2**: 1362 (Dec. 16) 1950.

3. Ragan, C.; Grokoest, A. W., and Boots, R. H.: Effect of Adrenocorticotrophic Hormone (ACTH) on Rheumatoid Arthritis, Am. J. Med. **7**: 741 (Dec.) 1949.

4. Thorn, G. W., and others: The Clinical Usefulness of ACTH and Cortisone, New England J. Med. **242**: 865 (June 1) 1950.

5. The antigen used, an emulsion of spleen from a patient with active sarcoid, was supplied by Dr. Carl T. Nelson, Columbia University College of Physicians and Surgeons.

METHODS

In order for a patient to be eligible for this study group, the diagnosis of sarcoid had to be confirmed histologically by either lymph node, liver, or skin biopsy. Wherever biopsy was not feasible, a positive result of a Kveim test [5] was accepted for for diagnosis if typical sarcoid histology was seen on biopsy of the nodule. In addition, it was required that a case to be studied have a rather typical clinical picture of sarcoid with grossly demonstrable pulmonary parenchymal infiltrates which could be followed easily by x-ray examinations.

Finally, each patient had to agree to hospitalization or bedrest for a minimum of two months (and in several cases longer). This period permitted evaluation of spontaneous regression of the disease and thus provided control observations prior to therapy. We also drew upon our experience with the previous cases of Boeck's sarcoid, in which treatment consisted of bedrest in this hospital, as a control for this study.

After the control period the patients were given 200 mg. of cortisone daily by intramuscular injection for two days, then 100 mg. daily until clearing was demonstrable on roentgenograms. Fairly complete pulmonary function studies and biochemical studies were done on all patients before, during, and after therapy. These will not be reported here. Weekly roentgenograms were made to evaluate the pulmonary changes. In one case it was possible to repeat the Kveim test during and after therapy.

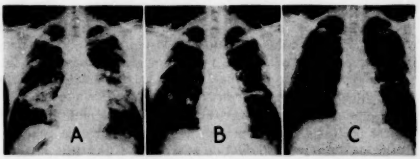

Fig. 1 (Case 1).—Roentgenograms showing clearing of pulmonary lesions in a 22-year-old man during cortisone therapy. *A*, at beginning of cortisone therapy; *B*, on seventh day; *C*, on eighteenth day.

REPORT OF TWO CASES

CASE 1.—This was the first admission of a 22-year-old white man who complained of dyspnea on exertion of four months' duration. Chest roentgenograms one month before admission revealed widespread pulmonary infiltration. Except for dyspnea and mild anxiety, the patient was symptom-free. The past history and occupational history were noncontributory.

On physical examination the only abnormal finding was a large, firm epitrochlear node on the right. The hemogram, urinalyses, serum protein levels, results of liver function studies, and serum sodium and potassium values were normal and remained so throughout the period of hospitalization. Results of tuberculin tests were negative through 0.005 mg. of purified protein derivative.

Biopsy of the epitrochlear node was done, revealing a typical histologic picture of Boeck's sarcoid. A chest roentgenogram showed bilateral confluent mottled infiltration, involving mainly the middle third of the lung fields, and densities consistent with enlarged bronchopulmonary and right paratracheal nodes. A complete skeletal x-ray survey revealed no abnormalities.

The patient was observed for two months, during which time there was no change in symptoms or in the roentgen picture. Cortisone was then administered in doses of 100 mg. daily by intramuscular injection for 18 days. At this time the patient insisted on leaving the hospital. Chest roentgenograms (Fig. 1) show the changes noted after 6 and 18 days of therapy. It will be noted that marked clearing occurred during the first six

days of therapy and that this clearing continued to the end of the period of therapy.

After 10 days the patient returned to the hospital and received an additional 18-day course of cortisone in the same dosage as previously. There was questionable further clearing during this time, but before adequate x-ray follow-up could be done, the patient left the hospital against advice. Unfortunately, no further follow-up could be obtained. No untoward side-effects of cortisone were noted during therapy.

CASE 2.—This was the first admission of a 27-year-old white man with complaints of pain and swelling of the knees and wrists of two weeks' duration. The present illness began approximately three and one-half months prior to admission with mild upper respiratory infection, followed in a few days by painful swelling of knees, ankles and many small joints. Lesions suggestive of erythema nodosum were described. There was mild dyspnea on effort at that time. These joint symptoms persisted for three weeks, during which time he was hospitalized elsewhere and treated with penicillin and aureomycin without effect. The symptoms cleared gradually and he remained on bedrest at home for one month. For an additional four weeks thereafter he remained well. Three weeks prior to admission to this hospital he again had a mild upper respiratory infection followed by joint symptoms similar to those of the first episode and associated with a temperature as high as 102 F. A course of salicylates was given, with slight relief of joint pains.

On admission the results of physical examination were within normal limits, except for a small ganglion of the left wrist. No abnormality of the joints was noted. A hemogram and results of urinalysis were normal. The sedimentation rate was 20 mm. (Cutler). Serum protein, sodium and potassium, and uric acid levels were normal. A sheep-cell agglutination test for rheumatoid arthritis was negative. The antistreptolysin titer was within normal limits. Cold agglutinins were absent. Sputum and gastric cultures for Mycobacterium tuberculosis and fungi were negative. Liver and kidney function studies revealed no abnormalities. Tuberculin reactions were negative through 0.005 mg. of purified protein derivative. Serial electrocardiograms were normal. Tonsillar biopsy revealed chronic tonsillitis. A liver biopsy was attempted unsuccessfully.

The chest roentgenogram on admission (Fig. 2A) showed a fine, nodular infiltration throughout the upper two-thirds of both lungs and densities in both roots suggestive of enlarged bronchopulmonary nodes. A complete skeletal survey revealed no pathological conditions. Cardiac fluoroscopy revealed no abnormality.

A tentative diagnosis of Boeck's sarcoid was made, and the patient was observed on bedrest for two months. Toward the end of this period some clearing was noted on the chest film (Fig. 2B and C). The patient was then given a 30-day leave of absence. Immediately after his return the chest x-ray findings were unchanged. Approximately two weeks later (three and one-half months after the initial observation) a chest roentgenogram showed a marked increase in the extent of involvement. The patient lost 6 lb. (2.7 kg.), and he complained of malaise. At this time a small nodule appeared at the site where Kveim antigen had been injected exactly two months previously. Biopsy of this nodule revealed a typical picture of Boeck's sarcoid.

Observation of the patient at bedrest was continued for another three weeks. No change in the roentgenogram occurred (Fig. 2D). Cortisone was then administered in dosage of 200 mg. daily for 2 days and thereafter 100 mg. daily for 26 days. Marked clearing occurred during the first six days of therapy (Fig. 2E), and clearing continued to the end of the period of therapy (Fig. 2F). During the first three days of treatment the patient continued to have anorexia and lost weight. Thereafter his appetite improved markedly, and he gained 7 lb. (3.2 kg.) during the first month of treatment. No untoward reactions affecting the kidneys or cardiovascular system were noted. Results of serial electrolyte studies and glucose tolerance tests were normal. The only abnormality was an increase of polymorphonuclear leucocytes with white blood cell counts ranging between 15,000 and 17,000.

COMMENT

In both of these cases significant clearing on roentgenograms occurred in six days, and in Case 2 there was almost complete clearing at that time.

The improvement in x-ray appearance in so short a period has not been observed in any of the control cases of this study group, and in the majority of cases we have observed at this hospital significant clearing has not been seen before four to six months of observation. In some of the cases, followed at home on modified bedrest, roentgenographic clearing of pulmonary lesions has required one to two years. Admittedly, two cases are really not enough to make generalizations as to the future role of cortisone in the therapy of Boeck's sarcoid. Nevertheless, these observations do suggest that cortisone affected the pulmonary lesions in some definite manner and that the control periods eliminated the likelihood of spontaneous clearing.

In both cases also clinical improvement, such as gain in weight, increase in vigor, and loss of the sensation of dyspnea, was manifested. Since these effects are also noted in a nonspecific manner with many diseases treated with cortisone, it is difficult to be certain whether the clinical improvement is actually due to regression of the sarcoid lesions or to the cortisone-produced state of well-

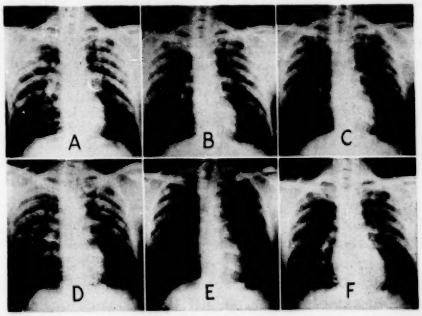

Fig. 2 (Case 2).—Roentgenogram showing effect of bedrest and cortisone therapy on pulmonary lesions in 27-year-old man. *A*, admission film; *B*, spontaneous clearing which occurred during one month on bedrest; *C*, almost complete clearing after two months on bedrest; *D*, at start of cortisone therapy after recurrence of lesions while patient was still on bedrest; *E*, on sixth day of cortisone therapy; *F*, on eighteenth day of cortisone therapy.

being. We have information which suggests that the improvement in subjective dyspnea can be correlated in Case 2 with marked improvement in measured pulmonary function, but as yet we are in no position to analyze this in detail.

The very rapid clearing of the pulmonary lesions on roentgenograms in these cases suggests that very little true organization of the sarcoid lesion was present. One can, therefore, speculate that the pulmonary lesions were of the nature of a granuloma without organization or a purely exudative infiltrate. It is not known whether the granulomatous type of lesion seen on biopsy in Case 1 was representative of the pulmonary lesion. Unfortunately, with regression of the disease there was no further opportunity to study biopsy material to see how the chronic granulomatous type of lesion was altered by therapy. It seems reasonable to expect a purely exudative lesion to respond more rapidly than a granulomatous one, and the results in these cases strongly suggest that

the pulmonary lesions in some cases of sarcoid may well have an exudative (cellular) phase prior to the actual formation of the granuloma. Since cortisone, however, might also bring about some alteration of the granulomatous lesion, it is not valid to conclude from these two cases that the pathologic process could not have been a well-established granuloma.

In view of the tendency toward relapse or exacerbation of chronic mesenchymal lesions following cortisone therapy, it remains to be seen whether cortisone has altered any fundamental pathological processes in these cases. It has been suggested that the gradual withdrawal of corticotropin therapy may help diminish the relapse rate.[3] For this reason our study patients are maintained on gradually diminishing doses of drug so that therapy will be stopped (after maximum improvement) slowly over a period of four or six weeks. The follow-up period at this writing is insufficient to permit conclusions regarding this point.

The mechanism of the action of cortisone in these cases is too obscure to require further comment. It is of interest that repetition of the Kveim test in Case 2 during cortisone therapy produced negative results, suggesting that cortisone in some manner interferes with the immunological processes in sarcoid. It is well documented that sarcoid in its active phase is usually associated with a positive Kveim reaction, and that the latter invariably becomes negative during a spontaneous period of regression or healing.[6] It is planned to follow these cases with serial Kveim tests to further evaluate this particular mechanism.

SUMMARY AND CONCLUSIONS

It is shown that cortisone will produce an unequivocal and pronounced regression of the pulmonary lesions in Boeck's sarcoid. The permanency of these changes is yet to be demonstrated. In the final analysis the relapse rate and perhaps the toxicity will determine the therapeutic usefulness of cortisone in Boeck's sarcoid. Cortisone therapy produced no significant toxic effects in these cases. The possible use of cortisone as a research tool in investigation of the fundamental nature and the immunizing mechanisms of Boeck's sarcoid is commented upon.

It is concluded that the place of cortisone in the treatment of sarcoid has not been fully evaluated. It is planned to continue this study and the results of prolonged follow-up will be reported at a later date.

130 W. Kingsbridge Rd.

6. Nelson, C. T.: Kveim Reaction in Sarcoidosis, Arch. Dermat. & Syph. **60**: 377 (Sept.) 1949.

FAVORABLE RESPONSE OF SARCOIDOSIS TO CORTISONE TREATMENT

Maurice J. Small, M.D., Staten Island, N. Y.

Cortisone therapy of pulmonary sarcoidosis has as yet not been reported in the literature.[1] Thorn and his co-workers [1a] reported one case of sarcoidosis, with pulmonary, uveal, and osseous manifestations, treated with 40 mg. of corticotrophin (ACTH) daily for eight days, without significant clinical or roentgen improvement. The patients reported on below were treated with 100 mg. of cortisone daily for four to six weeks and showed such marked improvement in clinical status, roentgen appearance, and pulmonary function that I consider them worth describing.

REPORT OF CASES

CASE 1.—*History.*—W. K. A., a 28-year-old Negro male veteran, was admitted to Halloran Veterans Administration Hospital on Aug. 14, 1950, with the chief complaints of cough, productive of moderate amounts of clear, mucoid sputum, and substernal pain. He was well until eight months prior to admission, at which time "a cold" developed. In addition to the cough, he experienced at that time chills, fever, and pain in the left side of the chest, not accentuated by coughing or deep breathing. The fever was transient, but he soon noted, despite a good appetite, progressive weight loss amounting to 50 pounds (22.7 kg.) eventually. For five months prior to admission, he had been short of breath on the slightest exertion but not orthopneic. In the last three months the cough was frequently followed by vomiting. He noted the appearance of small "bumps" on his arms one month before hospital admission.

Results of Physical Examination.—The patient was a well-developed, poorly nourished, young Negro man. The temperature was 99.0 F., the pulse rate, 100, and the respiratory rate, 24 per minute. He appeared both acutely and chronically ill, was apparently suffering some pain, was tachypneic, and showed evidence of recent weight loss. Over the upper arms and shoulders cutaneous and subcutaneous nodules varying from 2 to 5 mm. were noted. The left occipital lymph nodes were enlarged up to 1 cm. in diameter and were rubbery in consistency and freely movable. The posterior cervical, right supraclavicular, left axillary, and both inguinal lymph-node regions were moderately enlarged. The respiratory excursions were moderately limited, apparently by chest pain. On percussion and auscultation of the lungs, no abnormal signs were elicited. The remainder of the physical examination, including the cardiovascular system, the salivary glands, the bones, eyes, and uveal tract, was within normal limits.

Formerly Chief, Chest Section, Medical Service, Veterans Administration (Halloran) Hospital, Staten Island 2, N. Y.; now at Veterans Administration Hospital, Brooklyn.

Dr. H. A. Weiner, Chief, Medical Service, Halloran Veterans Administration Hospital, gave valuable advice and suggestions.

This article has been shortened for publication in THE JOURNAL by the omission of Figures 3 and 4. These will appear in the author's reprints.

Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

Further follow-up of these patients in order to determine the length of remission or the appearance of relapse has been hampered by an order from the Veterans Administration closing the Staten Island (Halloran) Veterans Administration Hospital on Feb. 15, 1951. Every effort is being made, however, to continue observation of these patients and to report any significant changes.

All pulmonary function studies were carried out in the laboratory of Dr. George Leiner, Chief, Pulmonary Function Laboratory, Halloran Veterans Administration Hospital, with the technical assistance of Mr. Sol Abramowitz. The microscopic sections were read by Dr. Oscar Auerbach, Chief, Laboratory Service, and the needle biopsy specimens of the liver were removed by Dr. Herbert King, Chief, Gastrointestinal Section, Halloran Veterans Administration Hospital. The Kveim reactions were carried out by Dr. Louis Siltzbach, New York City.

1. After this manuscript was submitted for publication, the following paper on this subject appeared: Sones, M.; Israel, H.; Dratman, M. B., and Frank, J. H.: Effect of Cortisone in Sarcoidosis, New England J. Med. **244**: 209-213 (Feb. 8) 1951.

1a. Thorn, G.; Forsham, P. H.; Frawley, T. F.; Hill, S. R., Jr.; Roche, M.; Staehelin, D., and Wilson, D. L.: The Clinical Usefulness of ACTH and Cortisone, New England J. Med. **242**: 783-793 (May 18); 824-834 (May 25); 865-872 (June 1) 1950.

Laboratory and Collateral Data.—Blood examination showed 12.2 gm. of hemoglobin, 4,170,000 red blood cells per cubic millimeter, 5,100 leucocytes per cubic millimeter, and a normal differential count. The thrombocytes (platelets) were reported as increased on smear examination, and the corrected sedimentation rate was 22 mm. per hour. A red-blood-cell sickling preparation was negative. The serological test for syphilis gave a negative reaction.

Total serum protein was 7.4 gm., with 4.8 gm. of albumin and 2.6 gm. of globulin per 100 cc.[2] Repeated serum protein examinations gave essentially similar results. However, estimation of the gamma globulin fraction by the turbidimetric method of Kunkel[3] revealed a marked increase in this fraction, with a value of 25 turbidity units (normal, 8 to 12 units). Blood urea nitrogen was 18 mg. per 100 cc. Serum calcium on two successive examinations was 10.8 and 12.1 mg. per 100 cc.; serum phosphorus measured 4.1 and 3.6 mg. per 100 cc.

The cephalin flocculation was 3 + after 48 hours. Thymol turbidity was 8.3 units. The serum alkaline phosphatase was 4.2 and 3.8 modified Bodansky units on two occasions, respectively. The excretion test with sulfobromophthalein (bromsulphalein®) sodium (5 mg. per kilogram of body weight) showed 2% retention after 45 minutes. Serum bilirubin was 0.6 mg. per 100 cc., with a direct fraction of 0.1 mg. and an indirect fraction of 0.5 mg. per 100 cc. The free and esterified serum cholesterol fractions were 73 and 110 mg. per 100 cc., respectively.

Repeated routine urinalyses were not revealing. Repeated Sulkowitch tests showed no abnormal calcium excretion. Examinations of the stool for ova, parasites, and blood gave negative results.

Numerous sputum studies were negative for acid-fast bacilli on smears examined by concentration technique and for tubercle bacilli on culture. The predominating organisms in the sputum were pneumococci and Hemophilus influenzae.

The posteroanterior chest x-ray taken on admission revealed extensive bilateral miliary parenchymal deposits, with confluence particularly at the hilar regions and especially on the right side. Tomographic examination of the lungs revealed no evidence of cavitation or bronchial compression. X-rays of the skeletal system showed no abnormalities. An electrocardiogram was interpreted as normal.

A tuberculin test with first-strength (0.00002 mg.) purified protein derivative (PPD) had a positive reaction. Histoplasmin and coccidioidin skin-test reactions were negative in a dilution up to 1:10.

Course in the Hospital.—The patient's course was characterized by an intermittent low-grade fever, a continued cough, and further loss of 14 lb. (6.4 kg.) in weight during a pretreatment period of 10 weeks. He was listless and willing to remain in bed all day. The cough did not respond to intensive antitussive therapy. Mucoid expectoration averaged 15 to 30 cc. daily. The dermatologic consultant (Dr. William Leifer) diagnosed the skin lesions as consistent with Boeck's sarcoid. One of these lesions and an occipital lymph node were removed for pathological diagnosis, and the following report was submitted:

Microscopic examination through a section of lymph node revealed its architecture to be altered by the presence throughout of discrete and contiguous, clearly defined, asymmetrically oval and rounded foci composed of light pink-staining fibers, within which were collections of epithelioid cells, a few lymphocytes, fibroblasts, and multinucleated giant cells of the Langhans type. There was no necrosis in these foci. The epithelioid cells were increased in number throughout the intervening nodal parenchyma and dilated subcapsular and perifollicular sinuses. Multinucleated giant cells were also present throughout. The capsule was thickened by an increase of dense collagenous connective tissue. Beyond the capsule was a small portion of striate muscle. The pathological diagnosis was epithelioid giant-cell tubercles compatible with Boeck's sarcoid of suboccipital lymph node.

Microscopic examination of the skin lesion yielded the same diagnosis.

Treatment.—An x-ray of the chest on Nov. 1, 1950 (Fig. 1 [left]), after 10 weeks of observation, showed no essential change from the film taken on admission. The patient was coughing incessantly, and obviously his condition was going downhill rapidly. Cortisone treatment was begun on Nov. 1, 1950, with a dose of 100 mg. three times for one day, followed by 100 mg. daily for six weeks. The response of the patient was dramatic. Within four days his cough and expectoration had almost entirely disappeared. There was a marked subjective improvement in well-being. He was no longer content to lie in bed all day but was eager to be up and around. He did not appear to tire so easily as before treatment. The cough and sputum cleared entirely in three weeks. The weight gain was steady and amounted to 14 lb. at the completion of therapy on Dec. 12, 1950. His improved status has continued to date (Jan. 6, 1951). During treatment the patient had a ravenous appetite. The first definite evidence of regression on x-ray was noted at four weeks, and at the completion of therapy it was generally agreed by all observers that regression was marked and unequivocal (Fig. 1 [right]). His face became slightly rounded, but there was no other evidence of cortisone side effects.

The cutaneous lesions and enlarged lymph nodes gradually regressed completely. Tuberculin tests were repeated during the third and, again, the fifth weeks of treatment and remained positive to first-strength PPD.

The following laboratory studies were obtained prior to and at intervals during therapy: daily, fluid intake and output; twice-weekly eosinophil counts; weekly serum sodium, serum potassium, 17-ketosteroid and 24-hour urinary chloride excretion, oral dextrose-tolerance test, erythrocyte-sedimentation rate, complete

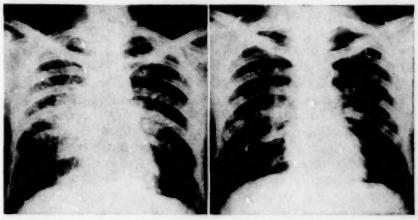

Fig. 1 (Case 1).—Left, x-ray of chest at beginning of cortisone administration, Nov. 1, 1950. Right, x-ray of chest after six weeks of cortisone administration, Dec. 13, 1950.

blood count and differential count, serum albumin-globulin ratio, and serum gamma globulin estimation, and biweekly serum cholesterol determination. Of these studies, all remained within the normal limits noted at the beginning of therapy, with the exception of the eosinophil counts[4] and the serum gamma globulin values. The former dropped to a level of 45 eosinophils per cubic millimeter and remained between 0 and 45 during the remainder of therapy. The serum gamma globulin values expressed in turbidity units[3] were, prior to treatment, 27.8 and 27.6 units, and during treatment at successive weekly intervals, 21.0, 19.5, 19.3, 16.8, and 14.8 units.

Pulmonary function studies, prior to and upon the completion of therapy, graphically confirmed the striking clinical improvement in respiratory function and exercise tolerance. The most significant figures are summarized below:

	Oct. 17, 1950 Before Treatment	Dec. 14, 1950 After Treatment
Vital capacity, cc.	2,530	3,230
Maximum breathing capacity, l./min.	96.1	155
Ventilatory reserve	9.8	18.3

2. Kingsley, G. R.: Rapid Method for Separation of Serum Albumin and Globulin, J. Biol. Chem. **133**: 731-735 (May) 1940.

3. Kunkel, H. G.; Ahrens, E. H., Jr., and Eisenmenger, W. J.: Application of Turbidimetric Methods for Estimation of Gamma Globulin and Total Lipid to Study of Patients with Liver Disease, Gastroenterology **11**: 499-507 (Oct.) 1948.

4. Randolph, T. G.: Differentiation and Enumeration of Eosinophiles in the Counting Chamber with a Glycol Stain: A Valuable Technique in Appraising ACTH Dosage, J. Lab. & Clin. Med. **34**: 1696-1701 (Dec.) 1949.

CASE 2.—L. S., a 24-year-old Negro male veteran, complained of moderate, persistent cough and slight weight loss for six months prior to admission to Halloran Veterans Administration Hospital on Oct. 2, 1950. He was well developed and well nourished and did not appear ill. The physical examination revealed nothing abnormal, with the exception of slight enlargement of the axillary and inguinal lymph nodes. All the laboratory studies listed in Case 1 were carried out for this patient with findings

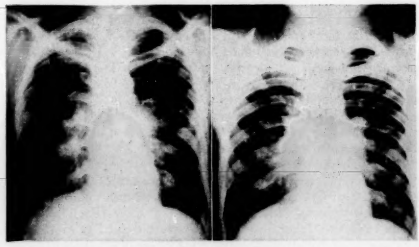

Fig. 2 (Case 2).—Left, x-ray of chest prior to cortisone administration, Dec. 11, 1950. Right, x-ray of chest after two weeks of cortisone treatment, Jan. 2, 1951. (Loss of detail in photographic reproduction does not adequately show the decrease that was evident on the original film.)

within normal range, except for a gamma globulin value of 14 turbidity units. The tuberculin test was negative with doses up to 1 mg. of old tuberculin (OT). Histoplasmin and coccidioidin skin tests (1:10) also gave negative reactions. The chest x-ray revealed large masses at both hilar regions (Fig. 2 [left]). Biopsy of inguinal and axillary lymph nodes, as well as of a tonsil, was not helpful in establishing a diagnosis. However, pathological examination of a specimen obtained by needle aspiration of the liver (Fig. 3), as recently recommended by Baird,[5] revealed a picture compatible with a diagnosis of sarcoidosis. In addition, there was a positive Kveim reaction.

The patient was treated on the same schedule of cortisone administration and laboratory observation as W. K. A. (Case 1). Treatment was begun Dec. 18, 1950. A chest film on Jan. 2, 1951 (Fig. 2 [right]), showed definite clearing of the hilar masses. Symptomatically the patient was greatly improved; he experienced a striking increase in his sense of well-being; the cough disappeared, and he gained 5 lb. (2.3 kg.) in the first two weeks of therapy. The repeated laboratory observations showed no essential change.

Pulmonary function studies done prior to and three weeks after cortisone therapy showed the following:

	Dec. 11, 1950 Before Treatment	Jan. 8, 1951 During Treatment
Vital capacity, cc.	3,630	4,040
Maximum breathing capacity, l./min.	89.8	107.1
Ventilatory reserve	12.2	14.8

CASE 3.—N. B., a 24-year-old white male veteran, was admitted for the first time to Halloran Veterans Administration Hospital on March 13, 1950, with the complaint of intermittent pains in both sides of his chest of one year's duration. At that time a diagnosis of pulmonary sarcoidosis was made on the basis of chest x-ray (Fig. 4) and negative intradermal reaction to 1 mg. of OT; no material could be obtained to verify the diagnosis pathologically. He was readmitted Aug. 30, 1950, because of continued loss of weight, persistent chest pain, dyspnea on slight exertion, and cough. An x-ray of the chest made on the present admission (Fig. 5 [left]) showed definite progression of the extensive miliary deposits and hilar adenopathy as compared with the picture of nine months previously (Fig. 4).

The patient was well developed but showed evidence of recent moderate weight loss. The physical examination revealed normal findings except for a slightly enlarged right epitrochlear lymph node. All the laboratory studies listed under Case 1 were carried out in this case with essentially normal results, except for a gamma globulin value of 22 turbidity units. The tuberculin test was negative with first- and second-strength PPD and with OT up to 1 mg. Histoplasmin and coccidioidin skin tests (1:10) were negative. Numerous efforts to confirm the diagnosis pathologically, including needle biopsy of the liver, were fruitless. However, a Kveim reaction was positive.

The patient was observed for three and a half months and during this time lost 23 lb. (10.4 kg.) in weight. It was believed that his chest film showed slight progression of all lesions bilaterally. Treatment with cortisone was begun Dec. 18, 1950. A film taken on Jan. 2, 1951 (Fig. 5 [right]), showed marked clearing of both lung fields; the miliary parenchymal and hilar-node components both showed regression. The patient was impressed chiefly by the fact that he could walk longer distances without tiring. His chest pain and cough disappeared. He gained 4 lb. (1.8 kg.). The repeated laboratory tests showed no essential change, with the exception of the gamma globulin levels, which at weekly intervals were 19.8, 18.7, 16.6, and 15.2 turbidity units.

Pulmonary function studies done prior to and three weeks after cortisone therapy showed the following:

	Dec. 18, 1950 Before Treatment	Jan. 8, 1951 During Treatment
Vital capacity, cc.	1,740	2,490
Maximum breathing capacity, l./min.	94.3	107.1
Ventilatory reserve	10.9	12.0

COMMENT

The rationale for the treatment of pulmonary granulomatous disease, whether due to sarcoidosis or to chronic beryllium intoxication, is the effect on mesenchymal tissue of cortisone and corticotrophin.[6] This effect consists essentially of inhibition of granulation and connective-tissue formation and involution of lymphoid tissue. Presumably, in the early stage of granulomatous pulmonary disease, before irreversible

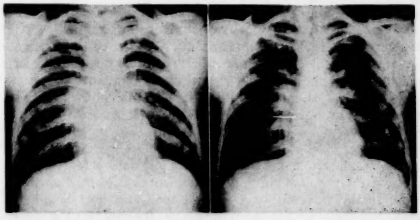

Fig. 5 (Case 3).—Left, x-ray of chest, Dec. 5, 1950, showing progression of lesions bilaterally. Right, x-ray of chest, Jan. 2, 1951, after two weeks of cortisone administration.

pulmonary fibrosis and emphysema have occurred, these agents may prevent or reverse the formation of granulomatous tissue.

Results similar to ours have been described with corticotrophin therapy of beryllium granulomatosis of the lungs by Kennedy and co-workers [7] and by Thorn and his group.[1a] Kennedy [7] treated one patient with 100 mg. of

5. Baird, M. M.; Bogoch, A., and Fenwick, J. B.: Liver Biopsy in Sarcoidosis, Canad. M. A. J. **62**: 562-564 (June) 1950.

6. (*a*) Selye, H.: Effect of ACTH and Cortisone upon "Anaphylactoid Reaction," Canad. M. A. J. **61**: 553-556 (Dec.) 1949. (*b*) Freeman, S.; Fershing, J.; Wang, C. C., and Smith, L. C.: Effect of ACTH on Patients with Pulmonary Tuberculosis, in Proceedings of the First Clinical ACTH Conference, edited by J. R. Mote, Philadelphia, The Blakiston Company, 1950, pp. 509-521. (*c*) Ragan, C.; Howes, E. L.; Plotz, C. M.; Meyer, K.; Blunt, J. W., and Lattes, R.: The Effect of ACTH and Cortisone on Connective Tissue, Bull. New York Acad. Med. **26**: 251-254 (April) 1950.

7. Kennedy, B. J.; Pare, J. A. P.; Pump, K. K., and Stanford, R. L.: Effect of Adrenocorticotropic Hormone (ACTH) on Beryllium Granulomatosis: Preliminary Report, Canad. M. A. J. **62**: 426-428 (May) 1950.

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corticotrophin daily for one month, with decided roentgen and clinical improvement. Thorn and associates [1a] treated their patient with 20 mg. of corticotrophin every six hours for eight days;

> . . . clinical and subjective improvement was unequivocal after four days of treatment. The patient became less orthopneic and had much less dyspnea on mild exertion. After eight days of therapy an x-ray film of the chest showed definite diminution in . . . density.

These results in pulmonary berylliosis are of particular interest, inasmuch as this granuloma is not known to undergo spontaneous remission,[8] as occasionally occurs in pulmonary sarcoidosis.[9] The possibility in our own patients of a spontaneous remission was considered but not thought likely in view of the rapidity with which the roentgen and clinical changes occurred and in view of the previous steadily downhill course for 10½ months in Case 1 and two years in Case 3, prior to cortisone therapy.

A possible theoretical danger in the treatment of pulmonary sarcoidosis with cortisone should be noted. If sarcoidosis is a noncaseating form of tuberculosis as is maintained by some,[9] and if, as is well known, certain cases of sarcoidosis develop into frank tuberculosis, then the indiscriminate use of corticotrophin or cortisone in the treatment of suspected sarcoidosis may be dangerous. In this connection, the tendency of corticotrophin and cortisone to produce rapid progression and dissemination of tuberculosis, both experimentally [10] and clinically,[6b] should be emphasized.

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The decrease in elevated gamma globulin values during cortisone therapy noted in Cases 1 and 3 is in keeping with the findings of Hench and his group,[11] who, in their studies of the response of rheumatoid arthritis to cortisone, recorded a lowering of the concentration of serum globulin and return to normal of albumin-globulin ratios. It is of interest to note that in our cases, despite the gamma globulin decrease during cortisone therapy, the total globulin as determined by conventional salting-out technique (the Kingsley [2] method) showed essentially no change.

SUMMARY AND CONCLUSIONS

Three patients with sarcoidosis were treated with cortisone for periods of four to six weeks. Two of the patients had only pulmonary manifestations; one had lymph-node and cutaneous involvement as well. There was a rapid regression of the pulmonary, and disappearance of the lymph-node and cutaneous, manifestations of the disease. The disappearance of cough, expectoration, and dyspnea, and the objective improvement on pulmonary function tests, was dramatically rapid. The necessity for continued, careful observation of patients so treated and the possible dangers of such therapy are discussed.

ADDENDUM

In a fourth patient with sarcoidosis cortisone therapy was started at the time this manuscript was submitted, and we have been able to follow him to date. In several respects he is the most interesting of the group.

CASE 4.—J. S., a 30-year-old white male credit investigator, dated the onset of his present illness to March, 1950, at which time he noted dyspnea on exertion, slow weight loss, anorexia, and moderate cough productive of small amounts of mucoid sputum. After complete diagnostic studies at the Veterans Administration Regional Office, Brooklyn, a diagnosis of pulmonary sarcoidosis was made on the basis of x-ray, negative tuberculin reaction, sputum cultures negative for tubercle bacilli, and a noncontributory occupational history. The patient's condition progressively deteriorated; he lost 30 lb. (13.6 kg.) and became more dyspneic; after examination on Oct. 31, 1950, the Regional Office radiologist submitted the following report:

"Comparison with the preceding study of April 21, 1950, reveals the following changes: There is a considerable increase in the extent of infiltration in the left lung . . . with confluence and partial consolidation. There is increased infiltration also in the right lung . . . There also appear to be some enlargement of the hilar shadows and slight widening of the superior mediastinum as associated with increased adenopathy. . . . The possibility of a tuberculous process superimposed on the old Boeck's sarcoid may be taken into clinical consideration."

The patient was accordingly sent to Halloran Veterans Administration Hospital at once. All the clinical and laboratory studies listed under Case 1 above were carried out; only the significant findings are summarized here. The patient appeared emaciated and weak. He was only slightly dyspneic at rest but became markedly so with the slightest exertion and could not climb more than one-half flight of stairs. There were many small, hard bilateral inguinal, left cervical, and epitrochlear lymph nodes; biopsy of these was done with negative results. The fingers revealed moderate clubbing. Negative intradermal reactions were obtained with 1 mg. OT and with histoplasmin and coccidioidin (1:10). Numerous examinations of sputa and gastric contents for tubercle bacilli by smears of concentrated material and cultures all gave negative results. A liver biopsy specimen, x-rays of the hands and feet, and a complete ophthalmological examination revealed normal findings. Although albumin and globulin values [2] were normal, turbidimetric estimation of gamma globulin [3] gave a value of 17.8 turbidity units. The Nickerson-Kveim reaction was read as "weakly positive."

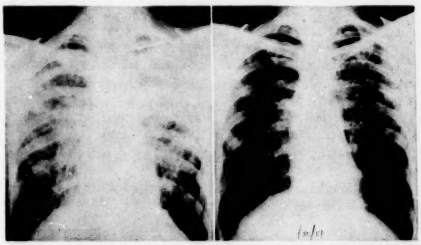

Fig. 6 (Case 4).—Left, x-ray of chest, Dec. 11, 1950, showing massive, bilateral involvement. Right, x-ray of chest, July 30, 1951, five months after completion of cortisone administration.

The admission chest x-ray (Fig. 6 [left]) revealed extensive bilateral granulomatous involvement, with upward retraction of both hilar regions and emphysema of the bases. Bullae were noted in the right apex and both basilar regions. Tomograms revealed marked enlargement of the hilar nodes. This picture was considered by all who saw the patient as indicating predominantly a long-standing, massive pulmonary fibrosis and bullous emphysema subsequent to a "burnt-out" pulmonary sarcoidosis. It was predicted that in this type of pathologic state cortisone administration would probably not yield any significant therapeutic result.

8. DeNardi, J. M.; Van Ordstrand, H. S., and Carmody, M. G.: Chronic Pulmonary Granulomatosis: Report of 10 Cases, Am. J. Med. **7**: 345-355 (Sept.) 1949.

9. Pinner, M.: Pulmonary Tuberculosis in the Adult: Its Fundamental Aspects, Springfield Ill., Charles C Thomas, Publisher, 1945, pp. 312-320.

10. Hart, P. d'A., and Rees, R. J. W.: Enhancing Effect of Cortisone on Tuberculosis in the Mouse, Lancet **2**: 391-395 (Sept. 23) 1950.

11. Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Effect of Hormone of Adrenal Cortex (17-Hydroxy-11-Dehydrocorticosterone: Compound E) and of Pituitary Adrenocorticotropic Hormone on Rheumatoid Arthritis: Preliminary Report, Proc. Staff Meet., Mayo Clin. **24**: 181-197 (April 13) 1949.

During a pretreatment observation period of six weeks, the patient rapidly lost ground; his weight dropped 6 lb. (2.7 kg.), and his dyspnea became more marked. In view of this, and despite the discouraging roentgen appearance, cortisone therapy was started Jan. 18, 1951. Improvement was striking and rapid. The cough decreased in amount and severity, and after 10 days the patient could walk up two flights of stairs with only slight dyspnea. Weight returned to the immediate pretreatment level and has been maintained to date. Treatment had to be discontinued after 12 days (1.4 gm. of cortisone) owing to the closing of Halloran Veterans Administration Hospital, and the patient was transferred to the Veterans Administration Hospital, Brooklyn, on Jan. 29, 1951. It was thought that the chest x-ray at this time showed slight but definite bilateral clearing.

After his transfer to the hospital in Brooklyn, he was given cortisone (1.1 gm.) an additional 11 days, from Feb. 21 to March 3, at which time treatment was discontinued because the drug was no longer available. No further subjective improvement was noted from this course of cortisone therapy, but the chest x-ray now showed unequivocal bilateral clearing. Monthly chest roentgenograms since completion of cortisone administration have shown continued regression of infiltrations, and the most recent film, July 30, 1951 (Fig. 6 [right]), reveals findings compatible with emphysema, bullae, and scattered areas of linear fibrosis. The patient's functional capacity has likewise progressively improved and is best revealed objectively by the summarized results of pulmonary function tests.

	Nov. 21, 1950 Before Cortisone	Feb. 9, 1951 After 1.4 Gm.	March 7, 1951 After 2.5 Gm.	Aug. 13, 1951 5 Mo. After Cortisone
Vital capacity, cc.	2,260	2,960	3,010	3,480
Maximum breathing capacity, l./min.	85.2	88.9	99.7	99.7
Ventilatory reserve	11.5	10.6	12.3	...

Gamma globulin estimation on Aug. 10, 1951, still gave an elevated value of 17.8 turbidity units.

This patient has returned to his regular occupation and is being followed in the outpatient clinic.

The following post-treatment observations, covering a seven- to eight-month period, were made on the first three patients described above.

CASE 1.—W. K. A. has been working full time as a counterman in a busy restaurant in the heart of New York City since his discharge from Halloran Veterans Administration Hospital on Jan. 6, 1951. He is not dyspneic at work or on walking fairly long distances. He has, however, noted reappearance of a slight cough productive of small quantities of mucoid sputum and weight loss from 175 to 162 lb. (79.4 to 73.5 kg.) in the past three to four months. Examination on Aug. 20, 1951, revealed recurrence of lymphadenopathy, the size of the nodes being essentially the same as prior to cortisone therapy. No new skin lesions have appeared. The vital capacity was 3,000 cc. An x-ray of the chest on this date shows reappearance of numerous submiliary deposits throughout both lung fields. These infiltrations are not as numerous or as dense as on the pre-cortisone therapy film, nor are the large, confluent hilar masses noted prior to cortisone treatment present at this time. This patient is to be closely observed at frequent intervals in the outpatient clinic, and if his chest x-ray shows further progression of lesions or if his pulmonary function should again become incapacitating, retreatment with cortisone will be considered.

CASE 2.—L. S. received cortisone daily for 45 days (4.7 gm.), with a gradual decrease in the dosage during the last week. At the time of his discharge from the hospital, Feb. 2, 1951, he had no cough or expectoration; a chest x-ray showed still further regression of the bilateral hilar masses; the tuberculin reaction remained negative to 1 mg. of OT, and he felt entirely well. Pulmonary function studies on Jan. 30, 1951, showed still further increases in all the values cited above: vital capacity, 4,400 cc.; maximum breathing capacity, 122 l. per minute; ventilatory reserve, 16.7.

Four days after discharge from Halloran Veterans Administration Hospital, Feb. 6, 1951, the patient noted a dull lower-back ache, to the right of the spine, followed in a few days by headache and elevation in temperature to 102 F. The back pain became severer and more constant, fever persisted, and the patient was admitted to the Veterans Administration Hospital, Brooklyn, on Feb. 13, 1951. The significant findings upon admission were localized tenderness over the right sacroiliac area, body temperature ranging between 101 and 105 F., conversion to a positive tuberculin (0.00002 mg. of PPD) reaction, repeated leukocyte counts ranging between 3,950 and 6,000 per cubic millimeter, and lymphocyte counts between 20 and 45%. Multiple blood cultures and agglutination reactions were all negative. Repeated examinations for tubercle bacilli were made on spinal fluid by smear, culture, and guinea-pig inoculation, and on gastric contents and prostatic secretion by smear and culture, all with negative results. Repeated chest x-rays showed continued regression of the bilateral hilar masses, with no evidence of miliary deposits or other parenchymal involvement. X-rays of the entire spine taken on Feb. 16, 1951, revealed no abnormalities to explain his back pain.

The fever continued at high levels for the first month of hospitalization. After all material for bacteriological cultures had been submitted, adequate trials of therapy with salicylates, penicillin, aureomycin, and streptomycin and *p*-aminosalicylic acid successively for two weeks were without effect on the course of the illness or the fever. The fever persisted at a somewhat lower level until the middle of April and then slowly resolved by the middle of May.

The first definite finding to explain this prolonged febrile illness was on a repeat spine film, March 3, 1951. This revealed a destructive lesion of the right lateral aspect of the upper part of the body of the second lumbar vertebra. Further progressive destruction was noted on spine x-rays of March 24 and May 19, and on the latter film bulging of the shadow of the right psoas muscle was noted for the first time. A spinal fusion from the tenth dorsal to the fourth lumbar vertebrae was done uneventfully on May 29, 1951, streptomycin administration being started on May 23 and continued to date.

Of three 24-hour urine cultures for tubercle bacilli submitted shortly after admission, one specimen of Feb. 26, 1951, grew a single colony of acid-fast bacilli after six weeks. This material, injected into a guinea pig, yielded a positive reaction for pathogenicity after two months. Subsequent urine cultures of May 21 and May 26 grew tubercle bacilli in four weeks. An intravenous pyelogram done on May 27 revealed no definite abnormality, but a retrograde study was recommended for more complete visualization.

Chest x-rays have shown steady clearing, and the appearance on last film, taken on May 16, 1951, is considered as within normal limits.

This case may well illustrate the chief danger of cortisone administration in sarcoidosis commented on above. If there is indeed a causal relationship between the administration of cortisone and the development of osseous and probable genitourinary tuberculosis in this patient, our experience in this respect appears to be unique thus far. Personal communications from Dr. Maurice Sones,[1] of the Woman's Medical College of Pennsylvania, Philadelphia, and from Dr. Max Michael Jr., of the Veterans Administration Hospital, Chamblee, Ga., each of whom has by now treated with cortisone approximately 10 persons having sarcoidosis and observed many for as long as one year thereafter, state that in no instance have they observed the development of tuberculosis. We, however, recommend that the use of this agent in treatment of pulmonary sarcoidosis be restricted to the patient with evident serious progression and significantly increasing pulmonary insufficiency. It may also be wise, in such cases, to "cover" the course of cortisone therapy with administration of streptomycin.

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CASE 3.—N. B. received cortisone daily for 45 days (4.7 gm.), with a gradual decrease in the dosage during the last week. Pulmonary function studies on Jan. 27, 1951, showed further improvement in the results listed above: vital capacity, 2,430 cc.; maximum breathing capacity, 113.7 l. per minute; ventilatory reserve, 15.0. Tuberculin tests carried out during March, 1951, gave negative reactions to second-strength PPD and 0.1 mg. OT. Gamma globulin estimation, Aug. 10, 1951, still gave an elevated value of 18.4 turbidity units. Monthly chest x-rays, the most recent on Aug. 6, 1951, have shown the marked bilateral clearing to be maintained.

Veterans Administration Hospital, Brooklyn 9.

PRIMARY NEOPLASMS OF THE EPIDIDYMIS

SPECIAL REFERENCE TO ADENOMATOID TUMORS

Vincent J. Longo, M.D., John R. McDonald, M.D.
and
Gershom J. Thompson, M.D., Rochester, Minn.

Primary neoplasms of the epididymis are rare, but they are of importance in the differential diagnosis of diseases affecting this organ. Thirteen of these tumors encountered at the Mayo Clinic to January, 1935, were previously reported on by one of us (G. J. T.).[1]

The work of Evans[2] (1943), Golden and Ash[3] (1945), and others aroused sufficient interest to warrant reconsideration and reclassification of this group of neoplasms, with special reference to the so-called adenomatoid tumor. It is our purpose briefly to review and to analyze the world literature relating to this subject (134 cases) in an attempt to correlate the histopathologic features with clinical behavior. In addition, the entire group of such neoplasms seen at the Mayo Clinic (19 cases) will be summarized.

The first case of benign adenomatoid tumor of the epididymis was presented by Sakaguchi[4] in 1916; since then additional contributions have been made by many writers, including Evans,[2] Golden and Ash,[3] Hinman and Gibson,[5] and Masson and others.[6] In all, 71 authentic references were found in a survey to September, 1949; clinicopathologic data were included in 55 of the 71 reports and constitute the basis for the analysis that follows.

In 60% of these 55 cases the lesion was designated adenomatoid tumor or mesothelioma; in the remaining 40% the lesion was diagnosed lymphangioma, adenofibromyoma, mixed tumor of the epididymis, adenoma, epididymoma, and adenocarcinoma. The average age of the patients was 41.5 years (youngest, 21; oldest, 78); most of the men were in the fourth decade of life. Tumefaction represented the chief complaint in 76% of cases; in 10 instances (18%) the tumor was an incidental finding at physical examination. Pain was the presenting symptom in only two cases; the duration of the enlargement ranged from three days to more than 30 years. A small hydrocele was described in seven of the 55 cases; only four of the patients mentioned pain as a prominent symptom.

The commonest preoperative diagnoses were tumor of the epididymis, chronic epididymitis, testicular neoplasm, and spermatocele, in that order of frequency. Adenomatoid tumors are relatively small; more than 80% in the entire series were less than 2.5 cm. in diameter; the largest, reported by Hinman and Gibson,[5] was 9 cm. by 5 cm. Treatment consisted of epididymo-orchiectomy in 12% of cases; in the remaining 88%, epididymectomy alone or excision of the tumor was performed an equal number of times. The globus minor was affected four times more frequently than the head of the epididymis; the left side was involved almost twice as often as the right.

No instances of multiple tumors were recorded in this group, nor were there cases of bilateral involvement; there was no significant correlation between antecedent trauma or venereal disease and the development of this neoplasm. Three of the men were Negroes, one was Japanese, and the remainder were white. Finally, there have been no recorded instances of recurrence or metastasis of the adenomatoid tumor; it is a true benign neoplasm.

The second commonest benign tumor of the epididymis is the leiomyoma, of which there are 14 authentic cases in the world literature (first case reported in 1880). Hinman and Gibson[5] and Friedman and Grayzel[7] (1942) have presented excellent papers on the myomatous group of epididymal neoplasms; the most recent report is that of Gordon-Taylor[8] (1943). Bilaterality of the leiomyomas was noted in two of the 14 cases; hydrocele was a common accompaniment, but with no predilection for either side.

A variety of rare, miscellaneous benign tumors of the epididymis have been reported in the past: six of these were of vascular origin, two were described as cystic embryomas, while five others represented single in-

Fellow in Urology, Mayo Foundation (Dr. Longo); from the Division of Surgical Pathology (Dr. McDonald) and the Section on Urology (Dr. Thompson), Mayo Clinic.

Abridgment of thesis submitted by Dr. Longo to the faculty of the graduate school of the University of Minnesota in partial fulfilment of the requirements for the degree of Master of Science in Urology.

1. Thompson, G. J.: Tumors of the Spermatic Cord, Epididymis, and Testicular Tunics: Review of Literature and Report of 41 Additional Cases, Surg., Gynec. & Obst. **62**: 712-728 (April) 1936.

2. Evans, N.: (*a*) Mesothelioma of the Uterine and Tubal Serosa and the Tunica Vaginalis Testis: Report of 4 Cases, Am. J. Path. **19**: 461-471 (May) 1943; (*b*) Mesothelioma of the Epididymis and Tunica Vaginalis, J. Urol. **50**: 249-254 (Aug.) 1943.

3. Golden, A., and Ash, J. E.: Adenomatoid Tumors of Genital Tract, Am. J. Path. **21**: 63-79 (Jan.) 1945.

4. Sakaguchi, Y.: Über das Adenomyom des Nebenhodens, Frankfurt. Ztschr. f. Path. **18**: 379-387, 1916.

5. Hinman, F., and Gibson, T. E.: Tumors of the Epididymis, Spermatic Cord and Testicular Tunics: A Review of the Literature and Report of 3 New Cases, Arch. Surg. **8**: 100-137 (Jan.) 1924.

6. Masson, P.; Riopelle, J. L., and Simard, L. C.: Le mésothéliome bénin de la sphère génitale, Rev. canad. de biol. **1**: 720-751 (Dec.) 1942.

7. Friedman, H. H., and Grayzel, D. M.: Myomatous Tumors of the Epididymis, J. Urol. **47**: 475-481 (April) 1942.

8. Gordon-Taylor, G.: A Case of Fibromyoma of the Epididymis in an Undescended Testicle, Brit. J. Surg. **31**: 146-147 (Oct.) 1943.

stances each of lipoma, dermoid cyst, fibroma, adrenal cortical adenoma, and cholesteatoma.

No large single series of carcinomas of the epididymis observed by one author has been reported; Lazarus [9] in 1938 presented a review of all malignant epididymal tumors recorded to that date. A total of 11 authentic cancers primary in the epididymis is recorded in the literature; those described as seminoma and squamous or basal-cell epithelioma are excluded from the present report, since the true site of origin is inconclusively determined.

However, primary sarcomas of the epididymis are more than twice as common as malignant neoplasms of epithelial origin; 23 such tumors were discovered in this survey.

not apparent from a study of isolated reports or analysis of a small series of cases. A more complete understanding of the true benign nature of many epididymal tumors previously considered malignant must lead to a revision of the statement that 60% of these lesions are malignant and 40% benign.

To this date, 134 authentic primary epididymal tumors have been recorded in the world literature (exclusive of all cases from the Mayo Clinic). Of this number, 98 (74%) were benign; 36 (26%) were malignant.

The adenomatoid tumor is the commonest neoplasm of the epididymis, and accounts for 53% of the entire group.

This survey disclosed that sarcoma of the epididymis occurs more than twice as frequently as carcinoma; the

Primary Neoplasms of the Epididymis: Nineteen Cases From the Mayo Clinic

No.	Year	Age	Chief Complaint	Symptoms, Duration (Years)	Pain	Hydrocele	Size (Cm.), Location	Preoperative Diagnosis	Treatment	Pathologic Diagnosis	Follow-up
1	1915	45	Tumor	Not stated	—	+	1 by 1; right	Tuberculosis	Epididymectomy	Leiomyoma	None
2	1916	56	Tumor	6	+	+	7 by 7 mm.; right	Spermatocele	Excision of tumor	Adenomatoid tumor	None
3	1918	27	Tumor	7	+	—	2.5 by 2.5; right (tail)	Tuberculosis	Excision of tumor	Adenomatoid tumor	Alive, well, 20 yr.
4	1919	42	Tumor	4	+	+	3 by 2; left (tail)	Tuberculosis	Epididymectomy	Adenomatoid tumor	Lived 26 yr.
5	1922	31	Tumor	6	—	+	2 by 1.5; left (tail)	Spermatocele	Excision of tumor	Adenomatoid tumor	Alive, well, 26 yr.
6	1926	49	Routine finding	Unknown	—	—	2 by 1.5; left	?Tumor ?Tuberculosis	Excision of tumor	Adenomatoid tumor	Died 3 yr. later; cause?
7	1929	30	Tumor	10	—	—	2 by 2; left (tail)	Tumor of testis	Excision of tumor	Adenomatoid tumor	None
8	1932	44	Tumor	5 to 6	—	—	1.5 by 1.5; right (tail)	Tuberculosis	Epididymectomy	Adenomatoid tumor	Alive, well, 17 yr.
9	1933	29	Routine finding	Unknown	—	—	1 by 1; right (tail)	?Spermatocele ?Tuberculosis	Orchiectomy	Adenomatoid tumor	Alive, well, 15 yr.
10	1934	54	Tumor	4	+	—	1 by 1; right (tail)	Tumor of testis	Orchiectomy	Adenomatoid tumor	Alive, well, 14 yr.
11	1937	46	Tumor	1½	+	—	1 by 1; right (tail)	Epididymitis	Excision of tumor	Adenomatoid tumor	Alive, well, 11 yr.
12	1940	49	Tumor	16	+	+	2.5 by 2.5; right (tail)	?Tuberculosis ?Hematoma	Excision of tumor	Adenomatoid tumor	Alive, well, 8 yr.
13	1943	50	Tumor	7	+	—	3 by 3; right (tail)	Tumor of epididymis (benign)	Epididymectomy	Adenomatoid tumor	Alive, well, 1 yr.
14	1944	42	Tumor	2	+	—	2 by 1.5; left (head)	Tumor of epididymis	Excision of tumor	Adenomatoid tumor	Alive, well, 4 yr.
15	1944	34	Incidental finding	Unknown	—	—	2 by 1.5; left (head)	Tumor of epididymis	Orchiectomy	Adenomatoid tumor	Alive, well, 4 yr.
16	1944	58	Incidental finding	More than 2	—	—	1.5 by 1.5; left	?Cyst ?Epididymitis	Excision of tumor	Adenomatoid tumor	Alive, well, 4 yr.
17	1946	60	Incidental finding	Unknown	—	+	3 by 3; right (tail)	Tuberculosis	Orchiectomy	Adenomatoid tumor	Alive, well, 2 yr.
18	1947	61	Tumor	More than 1½	—	—	3.5 by 3; left	Tumor of testis	Orchiectomy	Adenomatoid tumor	Alive, well, 1 yr.
19	1948	64	Incidental finding	Unknown	—	—	0.8 by 0.8; right (head)	Hernia, inguinal, recurrent	Orchiectomy; herniorrhaphy	Leiomyoma	None

The average age of patients who had carcinomas and sarcomas was the same: 41 years. Pain was far more prominent in these two groups than in the group of those who had benign lesions. The average postoperative survival of patients with carcinoma was one and one-half years; persons who have sarcoma usually die in less than a year after operation.

The only other malignant tumor found in the epididymis is the teratoma, of which there are two authentic cases.

Certain facts are borne out by this review of the literature on primary neoplasms of the epididymis that are former comprised 17% and the latter 8% of all recorded instances. As stated above, the so-called seminomas and epitheliomas of the epididymis cannot be included here; it is more likely that these neoplasms were of primary spermatocytic and dermal origin, respectively, with secondary invasion of the epididymis.

Finally, leiomyomas constitute 10% of primary epididymal neoplasms.

PRESENT STUDY

The clinical records of all patients who had undergone surgical treatment for primary tumors of the epididymis at the Mayo Clinic from Jan. 1, 1910, to Sept. 1, 1949, were reviewed, and the pertinent historical facts and follow-up data were summarized. A total of 19 cases (Table) is presented in this series; all the lesions were benign (17 adenomatoid tumors, 2 leiomyomas).[9a] The true rarity of epididymal neoplasms is even more appar-

9. Lazarus, J. A.: Primary Malignant Tumor of the Epididymis, J. Urol. **39**: 751-765 (June) 1938.

9a. Since this paper was submitted for publication, this same group of cases has been included in another report from the Mayo Clinic: Lee, M. J.; Dockerty, M. B.; Thompson, G. J., and Waugh, J. M.: Benign Mesotheliomas (Adenomatoid Tumors) of the Genital Tract, Surg., Gynec. & Obst. **91**: 221-231 (Aug.) 1950.

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ent when it is considered that only 19 lesions were encountered at the Mayo Clinic in 39 years.

Pathological Aspects.—Grossly, the adenomatoid tumor is small. In this series it was less than 2.5 cm. in diameter in most cases. Usually the neoplasm is globular, encapsulated, firm, and well circumscribed; it is not invasive, but remains discrete. The cut surface is characteristically yellow or gray-white, and often presents a whorled pattern similar to that of the uterine fibroid. Degenerative and inflammatory changes are absent in the typical lesion (Fig. 1).

The adenomatoid tumor is well encapsulated in a thin fibromuscular sheath. The stroma consists of abundant fibrous tissue that may be arranged loosely or in dense,

Fig. 1.—Adenomatoid tumor of the globus minor, showing gross relationships to epididymis, testis, and spermatic cord.

collagenous, acidophilic bundles. In addition, smooth muscle fibers are always present in the fibrous stroma; there is a paucity of endothelium-lined blood-vascular spaces. Within the connective tissues and separated by this stroma are the characteristic empty glandlike spaces, arranged loosely or in cords, and lined by flattened cuboidal to low-columnar cells. The latter contain finely granular eosinophilic cytoplasm with a prominent round or oval vesicular nucleus and single nucleolus. There are no mitotic figures. Many of the cells are vacuolated, giving a signet-ring appearance because of the peripherally displaced nucleus. Often these intracytoplasmic vacuoles fuse, forming larger conglomerate spaces. No direct communication was demonstrable between the lining cells and those of the covering serosa. In all these tumors, scattered nests of lymphocytes are prominent (Fig. 2, 3, 4). Although there are no specific staining reactions that might aid in the diagnosis of the adenomatoid tumor, the Mallory phosphotungstic-acid stain reveals a well-developed and clearly demonstrable brush-border (Fig. 5).

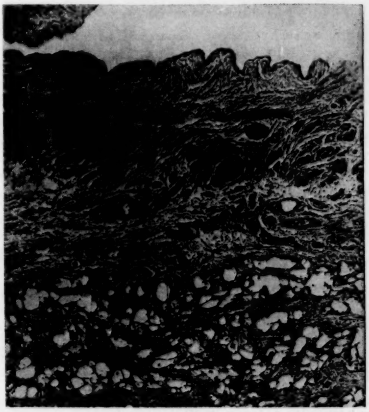

Fig. 2.—The tunica albuginea is seen at the upper border; most of this specimen consists of loose cords and fibromuscular stroma (hematoxylin and eosin, × 50).

THEORIES OF PATHOGENESIS OF THE ADENOMATOID TUMOR

Masson, Riopelle, and Simard [6] were the first to recognize that adenomatoid tumors are found in the ovary, fallopian tubes, posterior subserous uterus, spermatic

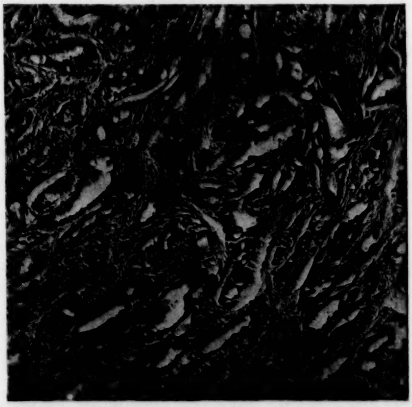

Fig. 3.—Higher magnification of adenomatoid tumor, note the empty glandlike spaces lined by vacuolated cells (hematoxylin and eosin, × 150).

cord, testicular tunics, and epididymis. They postulated the formation of a mesothelial anlage on the basis of certain cell characteristics. Because of the proximity of the tumors to the peritoneal lining, Evans,[2a] too, favored the theory of mesothelial origin; therefore, the afore-

mentioned workers prefer to call the tumor a mesothelioma.

Some authors have considered the tumor to be of endothelial nature because of the apparent similarity of the lining cells to those of the endothelium; it is felt that

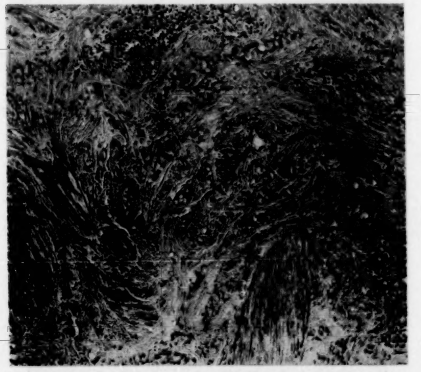

Fig. 4.—Scattered nests of lymphocytes are prominent in the stromal tissue (hematoxylin and eosin, × 95).

this resemblance is only superficial, however. Golden and Ash [2] also disputed this similarity to lymph or blood vessels and stated that there is "an essential difference cytologically between these cells and endothelium elsewhere, even in angiomas."

Fig. 5.—Two adenomatoid spaces showing detail of ciliated lining (Mallory's phosphotungstic-acid stain, × 1,000). Photograph taken with phase-contrast microscope by Dr. Matthew M. Patton, fellow in pathology, Mayo Foundation.

The earlier reports had favored the theory of epithelial origin. Ewing indicated such a pathogenesis with his diagnosis of adenocarcinoma in the case reported by Hinman and Gibson [5]; still other writers have called these neoplasms adenomas of the epididymis, speculating that the cell of origin was of epithelial nature and was derived from the mesonephric duct. Because of the lack of proof of an epithelial origin, Golden and Ash [2] proposed the term "adenomatoid"; this designation, they state, is "morphologically correct and genetically neutral."

It becomes apparent, therefore, that the main controversy revolves about the epithelial or mesothelial genesis of this oncologic entity, since most authors are agreed that the tumor components are not of endothelial character. This problem may be settled, however, if the histological structure and developmental distribution of the mesonephrogenic elements are considered. The latter are present (in both male and female) along the course of the epididymis, tunica vaginalis, and spermatic cord, and also along the course of the ovary, fallopian tubes, and posterior part of the uterus; it is precisely in these regions that the adenomatoid tumors have been described and reported.

Fig. 6.—Leiomyoma of epididymis, showing characteristic pattern of smooth-muscle bundles (hematoxylin and eosin, × 105).

In spite of the fact that the mesothelium-lined peritoneal surfaces are so extensive, the adenomatoid formations have not been described in any region remote from the embryologic course of the mesonephros. It is not likely that this would occur if the tumor were truly derived from the mesothelium; rather, a mesonephrogenic origin is much more plausible since the lesion is found only along the route of the mesonephros.

The second definitive embryologic kidney consists of a series of tubules in association with blood vessels and the wolffian duct; the mesonephros and its collecting system also contain all the elements known to occur in the adenomatoid tumor, including smooth muscle. The latter forms an integral part of all adenomatoid lesions, which, together with the leiomyomas, account for most of all epididymal neoplasms (Fig. 6). It is suggested that these two tumors are genetically closely related, and that the myomatous tumors represent a one-sided development of the same lesion.

In 1904 Albrecht [10] defined hamartoma as a "tumor-like malformation in which occurs only an abnormal

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mixing of the normal components of an organ"; it is made up of benign mesothelial and benign epithelial elements. Hamartomas have been described as occurring in the pulmonary bronchus, liver, spleen, and other organs throughout the body. The two main theories of disputed origin of the neoplasm under discussion may be rationally reconciled, therefore, if the adenomatoid tumor is regarded as a hamartoma of the mesonephros.

SUMMARY AND CONCLUSIONS

The microscopic features of the adenomatoid tumor tend to favor the theory of an epithelial origin, but the various disputed theories of formation may be reconciled if this neoplasm is regarded as a hamartoma of the mesonephros. Primary neoplasms of the epididymis are extremely rare; a review of the world literature disclosed only 134 authentic cases. Seventy-four per cent of primary neoplasms of the epididymis are benign; 26% are malignant. The most common neoplasm of the epididymis is the adenomatoid tumor; it accounts for 53% of the entire group.

A series of 19 microscopically proved tumors is presented from the files of the Mayo Clinic (17 adenomatoid tumors; 2 leiomyomas).

10. Albrecht: Ueber Hamartome, Verhandl. d. deutsch. path. Gesellsch. 7: 153-157, 1904.

EFFECT OF CORTICOTROPIN AND CORTISONE ON DEVELOPMENT AND PROGRESS OF PIGMENTED NEVI

Leon Goldman, M.D.
and
Daniel F. Richfield, M.D., Cincinnati

One of the reactions to corticotropin (ACTH) and cortisone therapy is the increased deposit of melanin in the skin. This has been observed as an exaggeration of pigmentation in preexisting dermatitis, and also independently of dermatologic disorders, by Behrman and Goodman,[1] Fitzpatrick,[2] Browne,[3] and others. No special note had been made, however, of the direct effect of these agents on pigmented nevi themselves other than pigmentation of the skin about the nevi.

Since the inception of corticotropin and cortisone therapy in clinical dermatology, we have paid particular attention to the action of these agents on pigmented nevi. The cutaneous lesions for which treatment was instituted and all nevi were described in detail and photographed by a standardized method of color photography before, during, and at intervals after brief and prolonged courses of therapy. In addition, pigmented nevi were photographed in situ at magnifications of 40× and 100× with the techniques previously reported.[4] The cutaneous lesions were biopsied during the course of therapy, and all circumscribed foci of pigmentary aberration were excised for microscopic study. In addition to routine hematoxylin-and-eosin stains, the pigmented lesions were treated by the method of Fitzpatrick for the demonstration of tyrosinase.

Our present series for this clinical report includes 31 patients treated more than two weeks with corticotropin and cortisone for various dermatologic disorders and an additional patient (Dr. D. Simon's) who had Hodgkin's disease. Of the 31 patients, four were found to exhibit significant generalized hyperpigmentation, and in five there developed new junctional nevi, which persisted despite post-therapeutic regression of the generalized pigmentation. In an additional patient, with acute disseminated lupus erythematosus, hyperpigmentation and new functional nevi developed after a flare of her condition, although she had been treated with prolonged courses of corticotropin and cortisone. Since these reactions occurred during the last trimester of pregnancy, her case is not included in this series. None of these lesions appeared to be malignant.

REPORT OF CASES

CASE 1.—N. D., a white man aged 29, was discharged from military service in 1943 with a diagnosis of rheumatoid arthritis. He was treated for the arthritis until February, 1950, when there developed constant low-grade fever, anorexia, and loss of weight. The ankles, wrists, elbows, and fingers became swollen and tender, and an erythematous rash spread with a butterfly pattern across his face. On admission to the hospital he was emaciated and acutely ill. There were light-brown patches on the forehead, and an erythematous eruption covered both cheeks, the bridge of the nose, and the chin. The heart was moderately enlarged, and there was a gallop rhythm. Both the spleen and the liver were enlarged, and there was generalized lymph-node enlargement. The white-blood-cell count was 3,600, with 90% neutrophils. The result of a Kline test for syphilis was negative. The total serum protein was 6.86 gm. per 100 cc., with 2.13 gm. of albumin and 4.73 gm. of globulin, of which 2.41 gm. was gamma globulin. Preparations for the demonstration of the lupus-erythematosus factor were positive.

The patient was given cortisone, 200 mg. daily, with rapid subjective and objective improvement. After eight weeks of therapy, cortisone therapy was stopped, and corticotropin was administered in doses varying from 80 to 120 mg. a day for two months. At present, 150 mg. of cortisone every other day is required for maintenance therapy, with occasional courses of 60 to 80 mg. of corticotropin daily. The patient has been followed for 16 months. Recently Cushing's syndrome has developed.

During the initial course of therapy, the preexisting pigmentation of the forehead became more intense, and new pigmented

From the Department of Dermatology and Syphilology, and the Department of Pathology, University of Cincinnati College of Medicine.

The corticotropin was furnished by Dr. John R. Mote, The Armour Laboratories, and cortisone (cortone®), by Dr. J. M. Carlisle, Merck & Company, Inc. The instruments used in this study were developed in part by a research grant from the Division of Research Grants and Fellowships of the National Institute of Health, United States Public Health Service.

1. Behrman, H. T., and Goodman, J. J.: Skin Complications of Cortisone and ACTH Therapy, J. A. M. A. **144**: 218 (Sept. 16) 1950.

2. Fitzpatrick, T. B.: Personal communication to the authors.

3. Browne, J. S. L., in Mote, J. R.: Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1950, p. 133.

4. Goldman, L.: Some Investigative Studies of Pigmented Nevi with Cutaneous Microscopy, J. Invest. Dermat. **16**: 407, 1951.

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macules appeared spontaneously on the extremities, back, and face (Fig. 1). There appeared to be no definite pattern to the distribution of the newly developed foci, nor could one state with certainty exactly when the lesions appeared, although they began under cortisone therapy and progressed with administration of corticotropin. The lesions, less than 1 mm. in diameter

Fig. 1 (Case 1).—Hyperpigmentation of the skin in the stage of remission after corticotropin and cortisone therapy. Note junctional nevi on the right side of the face. Black-and-white photograph taken from a Kodachrome.

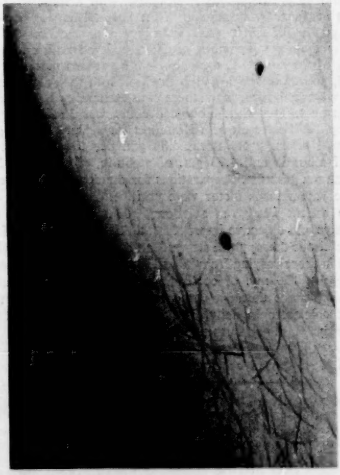

Fig. 2 (Case 1).—Progressive development of new junctional nevi after corticotropin and cortisone therapy. Black-and-white photograph taken from a Kodachrome.

when first recognized, increased progressively in size and in depth of pigmentation (Fig. 2). Clinically many resembled junctional nevi, and the cutaneous photomicrographs revealed actively developing junctional nevi. During the period of observation of 16 months, the diffuse pigmentation faded, in spite of the continued corticotropin and cortisone therapy. The injunctional nevi have not faded, and several are increasing in color and size. Into one junctional nevus on the trunk 25 mg. of cortisone was injected superficially by the Hypospray-jet injection apparatus. In a period of four-months' observation, there has been no change in the gross appearance of this lesion.

Microscopic sections of the early lesions revealed melanin deposits and beginning "clear-cell" transformation in the cells of the basal layer of the epidermis. As the pigmented foci increased in size, the epidermis became acanthotic; the melanin deposits increased in the basal layer and spread upward into the Malpighian layer. In many of the lesions the rete pegs were elongated, and large clusters of melanin-filled, clear cells were present in the epidermis at the base of the pegs (Fig. 3). This picture is identical with that seen in early junctional nevus of spontaneous origin.

CASE 2.—A. T., a white woman aged 34, was stung on the face by an insect in July, 1949. This was followed by nausea, fainting, and swelling of the face, hands, and feet. The edema subsided, but the skin about the eyes, right cheek, and nose remained painful and red. Six months later the lesion spread to the left cheek, and there developed fever, weakness, and polyarthritis. On her admission to the hospital, in addition to the facial erythema, there were red, scaly patches on the elbows and

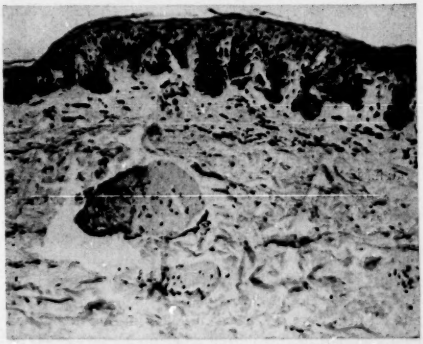

Fig. 3 (Case 1).—Photomicrograph of a large, deeply pigmented spot. The rete pegs are elongated and contain clusters of pigmented clear cells.

extensor surfaces of the forearms and brown patches on the back and abdomen. The finger joints were swollen and tender. There were generalized enlargement of the lymph nodes and slight hepatomegaly. The reaction to the Kahn test was negative. The urine gave a 1+ reaction for albumin but was otherwise normal. The total serum protein was 6.25 gm. per 100 cc., with an albumin-globulin ratio of 1.05:1. The gamma globulin was 1.45 gm. per 100 cc. Multiple preparations for the demonstration of the lupus-erythematosus factor were made by several observers at the Cincinnati General Hospital and by Dr. John Haserick, of Cleveland, and Dr. Richard J. Weiss, of St. Louis; all were negative. The patient, however, was believed to have a typical clinical case of acute disseminated lupus erythematosus.

Corticotropin was given in doses varying from 40 to 100 mg. daily for two months, with marked improvement in the clinical condition. A maintenance dose of 20 mg. of corticotropin is given at present.

Approximately three weeks after the beginning of therapy, a pigmented nevus on the forehead began to increase in size and depth of pigmentation. Shortly thereafter, new pigmented macules appeared on the face, arms, and legs. They started as minute pale-brown dots and progressively increased in size. The cutaneous photomicrographs again suggested actively developing junctional nevi. Histologic examination of these pigmented lesions in various phases of development revealed changes identical with those described in Case 1.

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CASE 3.—H. M., a white woman aged 45, had had discoid lupus erythematosus for years. This was associated with arthritis. There were periods of activity, usually occurring each spring. In the summer of 1950 there developed fever, loss of weight, and rapid spread of erythematous lesions of the face. These were associated with palmar erythema and petechiae. It was felt that acute disseminated lupus erythematosus was developing. The patient was reported to have had no examination for the lupus-erythematosus factor at her hospital. From Aug. 2 to Sept. 2, 1951, she received 80 mg. of corticotropin daily. Later urticaria developed and corticotropin therapy was discontinued. Urticaria appeared promptly when treatment with the drug was resumed. Then cortisone was given—first, 60 mg. a day; later, 20 mg. daily, as a maintenance schedule. Under corticotropin therapy an old junctional nevus on the lower part of the thigh showed intense increase in pigmentation at its lower pole only; the rest of the lesion was unaffected. This lesion was excised, and examination revealed a very active junctional nevus, with no evidence of melanoblastoma. A new junctional type of pigmented nevus appeared on the left forearm. Other junctional nevi which antedated therapy were unaffected. The skin of the hands showed some hyperpigmentation of both the diffuse and the freckling type. The discoidal patches healed completely, with white scars, which exhibited marginal hyperpigmentation. There was active seborrhea of the face.

CASE 4.—L., aged 24 (a patient of Dr. D. Simon's) had received corticotropin therapy for Hodgkin's sarcoma since Aug. 17, 1950. The daily dose was 100 mg. We first examined the patient about six weeks after therapy. At this time she revealed an acneform eruption of the face and back. In addition, there was diffuse pigmentation, most marked over the x-ray-treatment area of the anterior surface of the chest. There were also numerous areas of small blackish lesions, characteristic of junctional nevi. These were all of recent development. Excisional biopsy of two lesions on the posterior surface of the neck revealed changes similar to those in Case 1. During the period of observation of this patient, the generalized pigmentation, simulating the Addisonian type, increased, as did the seborrhea and acne. While no new nevi were observed to develop, the ones previously observed became darker and larger. In this patient, then, the pigmentary changes developed under corticotropin therapy alone.

CASE 5.—J. H., a white woman aged 54, with generalized and severe infectious eczematoid dermatitis, was treated with corticotropin for four weeks, in a dosage varying from 40 to 80 mg. daily. There was some improvement, which consisted essentially in the control of the vesicular phase, but not of the lichenified areas. After four weeks of therapy, a group of pigmented lesions characteristic of junctional nevi were observed with cutaneous photomicrography; their microscopic appearance was that of junctional nevi. Topical cortisone therapy was given to one lesion, with a control lesion receiving ointment base ("vanibase," containing cetyl and stearyl alcohol, sodium lauryl sulfate, white wax, and propylene glycol), alone and another no application. The initial concentration was 25 mg. in 10 gm. of ointment base. At present, after 11 months, no changes have been demonstrable with photomicrography. As yet, no biopsy has been done. The healed and arrested lesions of the infectious eczematoid dermatitis themselves did not reveal intense pigmentation.

COMMENT

Although puberty and pregnancy have been known to influence the pigmentation in nevi, and even in malignant melanomas, presumably because of hormonal factors, little is known of the effect of the adrenal hormones on pigmented nevi. In a discussion of Addison's disease, Loeb [5] stated, "The color of pigmented nevi is greatly intensified even when generalized pigmentation is scarcely recognizable." Since our studies were initiated, we have made an effort to investigate the effects of various spontaneous pigmentary disorders on preexistent nevi. In three cases of Addison's disease no recognizable effect on pigmented nevi was seen. In a case of severe generalized hyperpigmentation of unknown cause in an elderly man treated with testosterone because of his age, the pigmented nevi were hyperpigmented also, and there was a suggestion of the appearance of new nevi as the hyperpigmentation deepened. As additional proof of the apparent independence of the pigment in junctional nevi of the pigment of adjacent skin are our previous studies of the absence of appreciable color change in the nevi in sun-tanned persons and the persistence of color in the nevi in actively spreading areas of vitiligo.

According to Lund and his associates,[6] an increase in number and in depth of pigmentation of junctional nevi is not to be anticipated as a spontaneous occurrence in patients of the present age group. On the other hand, cutaneous hyperpigmentation and junctional-nevus formation are rarely found associated with any of the hyperadrenocortical syndromes. Why do these lesions develop after the administration of corticotropin and cortisone? For the purposes of this clinical report, it is best to state that the mechanism is not known at present. As Case 5 indicates, we are investigating the effects of these agents when applied directly to the junctional nevus by injunction and by local injection in situ and when added to the substrate of a tissue culture. These studies are being made also on junctional nevi of patients who have not had corticotropin or cortisone. In four patients cortisone ointment (10 mg. per gram of base) was rubbed daily into junctional nevi for one month. No changes were noted. Excisional biopsies were done on one patient.

It is well to emphasize that the practitioner must recognize these nevi and not confuse them with other, completely benign, pigmented spots, such as ordinary freckles (which may darken under oxysteroid therapy), seborrheic warts, fibromas, tattoo marks, and hemorrhage in tissue.[7] The reaction of change under corticotropin and cortisone therapy is important only as it concerns the pigmented nevi. There has been no clinical change in this series of the dermocellular type of nevus.

SUMMARY

Five of a series of 31 patients, all but one of whom had a dermatologic disorder, exhibited unusual hyperpigmentation and new junctional nevi under prolonged periods of combined or separate therapy with corticotropin (ACTH) and cortisone. Four cases were studied in detail, with biopsy. During the course of observation of these five patients and an additional patient, who was also pregnant, no clinical or histopathologic evidence of malignant melanoma was observed. The influences on this reaction of such factors as dosage, duration of therapy, and the patient's basic pattern of "normal" junctional-nevus development cannot be determined critically as yet.

5. Loeb, R. F.: Diseases of the Adrenals, in Christian, H. A.: Oxford Medicine, New York, Oxford University Press, 1947, Chap. 13, p. 803.

6. Lund, H. C., and Stobbe, G. D.: The Natural History of the Pigmented Nevus, Factors of Age and Anatomic Location, Am. J. Path. **25**: 1117, 1949.

7. Traub, E. F.: The Pigmented, Hairy and Warty Nevi and Their Relationship to Malignancy, South M. J. **40**: 1000, 1947. Becker, S. W.: Diagnosis and Treatment of Pigmented Nevi: Consideration of Some of the Pitfalls, Arch. Dermat. & Syph. **60**: 44 (July) 1949. Allen, A. C.: A Reorientation on the Histogenesis and Clinical Significance of Cutaneous Nevi and Melanomas, Cancer **2**: 23, 1949.

TREATMENT OF CARDIOVASCULAR SYPHILIS

EFFICACY OF PENICILLIN: STUDIES BASED ON ONE HUNDRED AND ELEVEN CASES

John H. Stokes, M.D., Charles C. Wolferth, M.D., Joseph Edeiken, M.D., Mortimer S. Falk, M.D., Oakland, Calif.
and
William T. Ford, M.D., Philadelphia

The diagnosis and treatment of syphilis of the heart and great vessels has been thorny ground for clinicians and practitioners for many years. Because in treatment, at least, a better era seems about to dawn, brief review of first principles may assist in rational understanding of the progress being made.

Diagnosis.—Early or "uncomplicated" syphilitic aortitis is presumed rather than proved to exist [1] when (1) the patient shows strong presumptive or absolute evidence of syphilitic infection; (2) the aortic second sound has a distinctive tambour or "Arab drum" quality in addition to its accentuation, and there is roentgenographic evidence of aortic dilatation, or of increased pulsation, or both, in the absence of hypertension or other nonsyphilitic conditions that may produce such signs. An aortic systolic murmur adds to the significance of findings only when other well-known causes of such a murmur appear unlikely. The evidence of the existence of syphilis includes significant findings such as scars or active lesions, evidence of neurosyphilis, and a history of infection, which, however, may be lacking though the patient has the disease. With the present-day sensitiveness of blood serologic tests, the patient usually has a positive reaction, but it may be of low titer and fluctuant intensity and may even be negative for long periods in progressive aortic syphilis. The possibility of biologic false positive tests also exist, and patients with other infections (virus, subacute bacterial endocarditis, perhaps even rheumatic fever) may, because of the nature of the serologic test, appear as syphilitic when they are not.

It is reasonable to propose, then, that if a safe therapy for syphilis exists, it can justifiably be invoked in patients with suspicion-arousing signs as well as in patients with presumptive evidence of the presence of the disease.

The appearance of such developments as cardiac enlargement, breathlessness on exertion or paroxysmal dyspnea, moist rales at the lung bases or dependent edema in a patient who had exhibited a seemingly uncomplicated group of signs probably signals progress of the disease and a situation somewhat more critical therapeutically.

The appearance of the diastolic regurgitant murmur has long been accepted as a serious sign, following which cardiac hypertrophy, pulmonary or hepatic congestion and other complicating embarrassments put the patient into a position where (1) accentuation of the damage might be quickly fatal or (2) decompensation tends to repeat itself in progressively more serious episodes finally irreversible.[2] It has been in this stage of syphilitic aortic disease that a schism developed between some cardiologists and syphilotherapists with the contention, on the one hand, that the primary therapeutic obligation was to treat the heart as a functionally impaired organ, with the syphilis as a side issue; and, on the other, that effective syphilotherapy even in decompensation results in quicker symptomatic relief, greater working capacity, less relapsing decompensation, and longer life expectancy.

It is not difficult to recognize the origins of these disparate views,[1] and even to sympathize at the start with the conservative position. Mercurial and iodide therapy of syphilis had over the years, as a wise observer once informally remarked, allowed syphilis to run a subthreshold course, external signs concealed, visceral and vital complications retarded but not blocked. The result was a harvest of syphilitic vascular disease, and a general impression of the slowness and relative ineffectiveness of treatment with mercury and iodide. Their use inevitably rated below the general management of the embarrassed heart. Then suddenly with the advent of the arsphenamines the position of syphilotherapy was reversed. Miracles of rapid healing in the visible lesions led to widespread application to visceral, vascular and neurosyphilis with sometimes outright disastrous results. It was a matter of years before the unfavorable impressions made on clinicians by the brash misuse of the arsenicals could be reinterpreted and evaluated, and the mistakes rectified.

From this study of mistakes emerged two conceptions fundamental to intelligent treatment planning in all aspects of syphilis: those of therapeutic shock and therapeutic paradox. The former, commonly spoken of as the Jarisch-Herxheimer or Herxheimer reaction, is a flare-up of the disease on the institution of treatment. Originally described by Jarisch [3a] for the secondary eruption under treatment with inunctions, it has been identified in every observable phase of the disease from the chancre to paresis, from the skin to the meninges.[1b] In the use of the arsenicals its intensity up to the point of destructive violence probably depends in part upon the initial intensity

From the Institute for the Study of Venereal Disease and the Robinette Foundation of the University of Pennsylvania, and the Penicillin-Syphilis Panel of the Hospital of the University of Pennsylvania.

Representatives of the Institute, Departments of Neurology, Ophthalmology, Dermatology and Syphilology and Pediatrics, Hospital of the University of Pennsylvania; the Division of Venereal Disease Control, Philadelphia City Department of Public Health; the Philadelphia General and Pennsylvania Hospitals, and the Children's Hospital.

1. (*a*) The literature of controversy among authorities on this question of the possibility of diagnosis is classified and the details reviewed in Stokes, J. H.; Beerman, H., and Ingraham, N. R., Jr.: Modern Clinical Syphilology: Diagnosis, Treatment, and Study, Philadelphia, W. B. Saunders Company, 1945, p. 908, fig. 681. (*b*) Other pertinent information is given on pp. 13-132 and 945. (*c*) Cole, H. N.; Usilton, L. J.; Moore, J. E., and others: Cardiovascular Syphilis: Cooperative Clinical Studies in the Treatment of Syphilis, Ven. Dis. Inform. **17**: 91-118 (April) 1936. (*d*) Edeiken, J.; Falk, M. S., and Steiger, H. P.: Observations on Penicillin-Treated Cardiovascular Syphilis, Am. J. M. Sc. **217**: 475 (May) 1949.

2. Moore, J. E.; Danglade, J. H., and Reisinger, J. C.: Treatment of Cardiovascular Syphilis: Results Obtained in 53 Patients with Aortic Aneurysm and in 112 with Aortic Regurgitation, Arch. Int. Med. **49**: 879 (June) 1932.

3. (*a*) Jarisch, A.: Therapeutische Versuche bei Syphilis, Wien. med. Wchnschr. **45**: 721, 1895. (*b*) Herxheimer, K., and Krause: Ueber eine bei Syphilitischen vorkommende Quecksilberreaktion, Deutsche med. Wchnschr. **28**: 895, 1902.

and impact of the treatment, though the "allergic" status of the individual also participates in the reaction. It is, therefore, to no small degree a function of the dosage as well as the activity of the treatment agent used. Its mechanism is still a problem,[4] but the earlier attributing of the flare-up to lysis of Treponema pallidum at lesion sites is almost certainly inadequate. It appears after the use of relatively nonspirillicidal drugs such as mercury and tryparsamide, and can be seen in lesions of late syphilis in which treponemes are few and far between. It is more probable that at least a part of the reaction is in the cellular tissues and of the nature of an immunity response, or even part of an allergic reaction. In any event there can be no doubt that therapeutic shock in a vital structure induced by metal, including arsenical therapy, had to be controlled. It was controlled by two devices: initial very low dosage, and the preliminary use, before the more shock-producing arsenicals were administered, of more or less prolonged "preparation" with the slower-acting heavy metals. Even bismuth, however, is able to produce therapeutic shock. Even neoarsphenamine can be given without serious clinical shock effects if the dosage is low enough.

A common clinical misconception of the Herxheimer effect in practice is that it is summed up in a rise of body temperature. Fever may be an accompaniment of therapeutic shock, but it is a mere flag-waver, often missing, and does not constitute the reaction as such. Since, moreover, rapid spirochetolysis is not necessarily an accompaniment of the action of drugs causing therapeutic shocklike effects, it is not sound reasoning to gage the shock-producing action of a drug by its rapid spirocheticidal action; notwithstanding that most therapeutic shock is observed with rapid spirillicides, probably because of high, shock-producing initial dosage.

Therapeutic shock, then, has been accepted as a danger in the treatment of cardiovascular syphilis during the middle and later years of the arsenical era, and has discouraged the full use of our therapeutic resource against syphilis in treating the disease in the heart and great vessels.

Vasculotoxicity as Such.—Very early in the use of the arsenicals their toxicity for the heart was suspected (Reid, Wilson [1c]), and, with later experience of their capillary-injuring properties, more might well have been made of this element in explaining untoward results from the arsenotherapy of syphilitic lesions of the heart, the coronaries and the great vessels. Our thinking has, however, been dominated by the Herxheimer reaction and the therapeutic paradox.

The Therapeutic Paradox.—The conception that a patient might be injured, even fatally, by rapidly induced healing of a syphilitic lesion in a vital structure is one that we owe to Wile,[5] who was first impressed with the rapidity with which syphilitic hepatitis improved with arsphenamines, and then with the equal rapidity with which the patient went downhill to uncontrollable ascites, with other evidence of hepatic injury and portal obstruction, and died. No experienced observer who has lived through the arsphenamine era is likely to have missed an example or two of therapeutic paradox. By inference as well as observation, the scope of the concept was broadened to include other late manifestations of syphilis; and supposed fibrous contractile scarring as a phase of the healing process, with shrinkage and distortion of the involved structure, rather than lack of time for functional adjustment, was emphasized as the evil consequence. The functional impairment and failure of compensation following a too rapid healing in heart valves, throwing them wide open on an inadequately hypertrophied ventricle, for example, is one matter; the hypothetical formation of tough and badly shrunken scars is another, and the fibrous contractile scar remains a hypothetical consideration to this day.

For the avoidance of therapeutic paradox, the preventive measures were much the same as for therapeutic shock. Because it is more difficult to demonstrate in invisible lesions and has no cutaneous visible counterpart, more skepticism has prevailed in regard to its reality. A wise conservatism accepts it as an unpredictable hazard in the treatment of cardiovascular syphilis, and delays the use of the arsenicals by the use of heavy metal preparations accordingly.

Why, then, not drop fast-acting drugs and antibiotics entirely from the eligibles in the treatment of cardiovascular syphilis? The use of penicillin and of the arsenicals might also be subject to the query. The answer lies, for the arsenicals, in the observations of a number of investigators who have shown that relief of immediate symptoms lessened likelihood of decompensation, and lengthened life expectancy follow the discriminating use of the arsenicals in all aspects of cardiovascular syphilis despite the now recognized vasculotoxicity of these drugs. The caution that must be used in all such studies is evidenced by Barnett and Small's admirable critical analysis [6] of their own and others' results. The better tolerance of the arsenoxides as compared with the arsphenamines may well rest on reduction in the vasculotoxicity factor in the former. With penicillin and others of its antibiotic successors which are effective against the syphilis, the vascular injury hazard in the treatment of the syphilitic heart and aorta may well disappear altogether.

Penicillin in Cardiovascular Syphilis.—Theoretically, penicillin, as a fast-acting spirillicide, if such action is the gage, should behave like other fast-acting spirillicides, the arsphenamines. It should produce not merely fever but an all around exacerbation of the syphilitic process, transient, and serious in proportion to the vital location of the lesion and the size of the initial dose. From the start, workers with the penicillins attempted to control anticipated shock effect by reduction in dosage, but the observations of Olansky [7] seemed to indicate that reduc-

4. Sheldon, W. H., and Heyman, A.: Morphologic Changes in Syphilitic Lesions During Jarisch-Herxheimer Reaction, Am. J. Syph., Gonor. & Ven. Dis. **33**: 213 (May) 1949.

5. Wile, U. J.: The Treatment of the Syphilitic Liver and Heart: A Therapeutic Paradox, Am. J. M. Sc. **164**: 415-428, 1922.

6. Barnett, C. W., and Small, A. A.: The Effect of Treatment on the Prognosis of Cardiovascular Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **34**: 301-318 (July) 1950.

7. Olansky, S. J.: The Herxheimer Reaction of Relatively Small Doses of Penicillin, J. Ven. Dis. Inform. **28**: 26-27 (Feb.) 1947.

tions to as low as 1,000 units were without effect in preventing Herxheimer reactions, though their intensity might conceivably be reduced without the existence of means to measure the reduction. Tucker and Farmer's study [8] showed that a febrile Herxheimer reaction fails to appear only below the extremely small doses of 1 to 10 units per kilogram. One tenth of the dose that will render a syphilitic lesion darkfield negative will nonetheless cause a Herxheimer reaction. The purified (crystalline G) penicillin gave us an impression of a lessened tendency to produce severe local flares and immediate serious reaction as compared with the arsphenamines. This constituted our first encouragement for its all-out trial in cardiovascular syphilis.

That penicillin treats the vascular system much more kindly than the arsenicals became apparent as millions of injections were given without injury to normal hearts or hearts impaired by infections other than syphilis. The total absence of hemorrhagic encephalitis, especially in the pregnant woman, was impressive. We are obliged to admit that it came to us too much as an afterthought that here, then, was a therapeutic agent which in itself was innocuous in contrast to the arsenicals. This rated as a second encouragement to the direct use of penicillin in the treatment of cardiovascular syphilis.

The problem of therapeutic paradox was insoluble except by cautious trial. A small experience with infantile congenital syphilis and with hepatic syphilis reduced our fear of paradoxical effects to a point which seemed to justify cautious use of penicillin without "preparation" even in patients with anginal symptoms, with large aneurysms, with regurgitant murmurs, and finally, as a climax, with outright severe cardiac decompensation. Both tolerance and symptom relief were remarkable, even in desperate cases, and a follow-up now extending into many months has failed to indicate an over-all impairment of life expectancy or a delayed inexorable increase in damage after transient improvement. We were thus encouraged to accept at least the lessened likelihood rather than the outright unlikelihood of therapeutic paradox as a serious by-effect of penicillin, used directly and without preparation, in the treatment of cardiovascular syphilis.

It must be recognized that on this point in our experience we are stating a credo to which exceptions may and have been taken. Examples of untoward results rated as Herxheimer effects and therapeutic paradox in patients with cardiovascular syphilis following penicillin therapy have been reported by Dolkart and Schwemlein [9] (two cases, one of anginal seizures and ventricular extrasystoles, one of intermittent substernal pain); Callaway [10] (ruptured aortic cusp); Moore [11] (one case, combined malaria and penicillin); Porter [12] (rupture of aneurysm, second day); Reynolds [13] (three cases, in one case regurgitation developing after use of penicillin for pneumonia) and Scott, Maxwell and Skinner [14] (two cases, one with meningococcic meningitis and ruptured aneurysm 49 hours after start of penicillin administration. It can hardly be denied that a death *post hoc* penicillin produces an almost uncontrollable impulse to cry *propter hoc*. The answer does not lie, however, in a case here and there, but in a well-defined trend toward not only immediate but ultimate bad results, which certainly does not appear in our series thus far. Such a trend may, however, be a long time taking shape because of the demands of follow-up, defects in controls, and the failure of cases to reach the literature. When evaluations comparable with those previously cited showing relief and life expectancy following use of arsphenamines and oxophenarsine in cardiovascular syphilis are finally accomplished for penicillin, our six years of experience encourages us to hope that they will do away with much of the fear of Herxheimer effects, with all the threat of vasculotoxicity and very nearly all the fear of therapeutic paradox. It may even appear that amelioration of unfavorable signs by penicillin, such as the disappearance of a diastolic murmur with improvement of cardiac function, will justify intensive early treatment with penicillin even in the face of what in the arsenical days would have been regarded as critical risks demanding prolonged "preparation."

In discussing therapeutic evaluation in cardiovascular syphilis, the puzzling complexity of the field must never be lost from sight. At best, our judgment will probably have to be clinical as to outcome and encumbered by insoluble variables in the work-up. One will have to await histologic and cytoimmunologic studies only just beginning before one can identify beyond question, even at autopsy, a Herxheimer reaction in the vascular system. The identification of therapeutic paradox at autopsy will be much more difficult. A living therapeutic result can be judged only in terms of symptoms, physical signs, roentgenographic appearances, working capacity and life expectancy. All evidence in any body of material will, moreover, be modified in compilation by lack of baseline information as to pretreatment status, disparate durations of the disease, often unknowable, work and stress factors seldom even considered, and disparate prepenicillin therapy. It is clear that in giving the summary of results to follow we are treading boggy ground.

Therapeutic Objectives and Dosage.—The first objective, relief of the patient's pressing symptoms, even in frequently recurring coronary pain and in actual decompensation, is accomplished by penicillin to an impressive degree, and the relief does not seem to be followed by renewed impairment of function within the limited range of our observation. The rate of restoration of decompensated patients to ambulatory status and even

8. Farmer, T. W.: Jarisch-Herxheimer Reaction in Early Syphilis: Treated with Crystalline Penicillin G, J. A. M. A. **138**: 480 (Oct. 16) 1948.

9. Dolkart, R. E., and Schwemlein, G. X.: The Treatment of Cardiovascular Syphilis with Penicillin, J. A. M. A. **129**: 515 (Oct. 13) 1945.

10. Callaway, J. L.; Noojin, R. O.; Flower, A. H., Jr.; Kuhn, B. H., and Riley, K. H.: Use of Penicillin in the Treatment of Syphilis of the Central Nervous System: Report of 100 Patients, Am. J. Syph., Gonor. & Ven. Dis. **30**: 110 (March) 1946.

11. Moore, J. E.: Penicillin in Syphilis, Springfield, Ill., Charles C Thomas, Publisher, 1947, p. 194.

12. Porter, R. R.: Penicillin in Cardiovascular Syphilis, Virginia M. Monthly **75**: 357 (July) 1948.

13. Reynolds, F. W., in discussion on Penicillin Treatment of Cardiovascular Syphilis, in Symposium on Current Progress in the Study of Venereal Diseases, United States Public Health Service, Washington, D. C., April 7-8, 1949; Personal communication to the authors.

14. Scott, V.; Maxwell, R. W., and Skinner, J. S.: Jarisch-Herxheimer Phenomenon in Late Syphilis: Probable Fatal Reactions to Penicillin, J. A. M. A. **139**: 217 (Jan. 22) 1949.

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substantial working capacity has encouraged a hope that actual ambulatory treatment of the seriously involved syphilitic heart and aorta, using procaine-based penicillin, may be in sight. A trial of this approach is now in progress. The question of how far to go on, treating the patient's syphilis as syphilis, granted satisfactory treatment of the heart as a heart has been carried out, is still better definable in negative than in positive terms. By inference from other fields of syphilis, there is no object in trying to secure a reversal of blood serologic reactions to negative, since a positive reaction in a patient with late syphilis once adequately treated by so-called "adequate treatment" in the metal era, which was rated at "20-20," or 20 weekly injections each of arsenical and heavy metal, is now generally accepted as of no further clinical significance. The equivalent of "20-20" in penicillin cannot yet be clearly defined, but certain considerations suggest a preliminary standard. Approximations to 5,000,000 units of penicillin G without a retarder or using the procaine base (not penicillin in oil and wax) given in a period of seven to 10 days are in our experience effective in early syphilis, in the pregnant woman, and even in neurosyphilis. Ten million units, repeated once if necessary, seems generally acceptable to most observers even in resistant neurosyphilis. There has been no reason in our experience with the "effective" treatment of early syphilitic vascular disease in the arsenic-heavy metal era to expect this form to be more resistant to treatment than parenchymatous neurosyphilis. The view seems plausible in cardiovascular syphilis, as in neurosyphilis, that treatment failure is due not to failure to arrest the syphilitic process but to the results of pretreatment damage plus the complications of arteriosclerosis, renal disease, etc., representing the breakdown of the individual under stress. Accordingly, we have tended to make 5,000,000 units an initial requirement and have repeated courses if symptoms were only partially relieved, or began to recur. It seems very possible that dosage in excess of two courses of 5,000,000 to 9,000,000 units each is simply "poured down the sink." If penicillin follows the same rule in cardiovascular syphilis as in neurosyphilis suggested by the Penicillin-Syphilis Panel's present experience, aqueous penicillin G in a round-the-clock schedule through a seven-day period, or a procaine-based penicillin once or twice daily for 10 to 15 days, will be preferable to the oil and wax suspensions in use for a time. Penicillin by mouth in cardiovascular syphilis is, so far as we yet know, an unknown quantity.

Hospitalization is recommended during the course as a safety and study-promoting measure, and as a means to rest and cardiac therapy as such, which should be given its full place in the general management of the patient. The possibilities of ambulatory treatment with procaine-based penicillin are under investigation.

Favorable Experience of Various Observers with Penicillin in Cardiovascular Syphilis. — Tucker and Farmer [15] treated 22 patients with syphilitic aortic insufficiency, and eight with aortic aneurysms with aqueous penicillin G; the doses ranged between 2,000,000 and 15,000,000 units; 5 had temperatures of 100 to 102.4 F within the first 16 hours of treatment. No severe reactions were observed. The Penicillin-Syphilis Panel at the University of Pennsylvania first reported its experiences [1d] with 50 patients in 1949, recording the over-all tolerance of the antibiotic, the absence of serious therapeutic shock and no clear-cut case of therapeutic paradox within the period of observation. In 1950 the Panel reported separately [16] 12 patients in congestive heart failure with syphilitic heart disease who had been given penicillin alone, without "preparation" of the conventional type, and who had apparently tolerated it well. The details are resummarized below. Ten improved objectively and subjectively within the period of observation. Flaum and Thomas [17] reported on 19 patients, 12 of whom had had one to three injections of bismuth preceding their penicillin, which is materially less than conventional preparation. No therapeutic shock developed. Russek and co-workers [18] treated 78 cardiovascular syphilitic patients with penicillin without "preparation" and observed no serious untoward reactions attributable to the antibiotic. Peralta and Castaneda [19] found in the treatment of 25 patients that the proportion of reactivity to the antibiotic was higher than that observed by others (28 per cent), but they concluded there was no danger to life with its use.

SUMMARY OF THE UNIVERSITY OF PENNSYLVANIA PANEL SERIES

Our series now includes a total of 111 cases classified as follows: "uncomplicated" syphilitic aortitis, 48 patients, of whom 34 have been observed from 3 to 58 months following treatment; aortic insufficiency, 51 patients, of whom 39 have been observed from 3 to 51 months following treatment; aneurysm and aortic insufficiency, 9 patients, 5 of whom have been observed from 8 to 38 months; aneurysm, 3 patients, one lost to observation, one died postoperatively (wiring operation) 34 days after penicillin, and one essentially unchanged 15 months after penicillin.

Results in Aortitis.—Thirty-five of 48 patients had received some form of antisyphilitic treatment before penicillin; in the majority, much less than an approximation to the 20-20 standard of adequacy. Penicillin was the initial treatment in 15 cases. Only five patients in the entire series experienced transient mild febrile Herxheimer reactions, and one had some substernal oppression early in the penicillin course. In no case was it considered necessary to interrupt the administration of the antibiotic. Of the 34 patients observed for more

15. Tucker, H. A., and Farmer, T. W.: Penicillin in Cardiovascular Syphilis: Early Reactions to Administration, Arch. Int. Med. **80**: 322 (Sept.) 1947.

16. Edelken, J.; Ford, W. T.; Falk, M. S., and Stokes, J. H.: Penicillin Treatment of Patients with Cardiovascular Syphilis in Congestive Failure, Circulation **1**: 1355-1361 (June) 1950.

17. Flaum, G., and Thomas, E. W.: Treatment of Cardiovascular Syphilis with Penicillin, Washington, D. C., United States Public Health Service, 1949, pp. 126-130.

18. Russek, H. I.; Cutler, J. C.; Fromer, S. H., and Lohman, B. L.: Treatment of Cardiovascular Syphilis with Penicillin, Ann. Int. Med. **24**: 947 (Dec.) 1946.

19. Peralta, A. V., and Castaneda, L. P.: Penicillin in Cardiovascular Syphilis, Abstracts, Third Inter-American Cardiological Congress, Am. Heart J. **37**: 661 (April) 1949.

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than three months (as of January, 1950), 11 showed varying degrees of improvement in symptoms or signs, 17 were unchanged, and 5 were definitely worse. One patient died of bronchopneumonia complicating lymphatic leukemia 12 months after treatment.

Results in Aortic Regurgitation.—Previous antisyphilitic treatment, mostly inadequate, had been administered to 38 of the 51 patients. Penicillin was the initial treatment in 13. Of the 39 observed for more than three months, 25 were improved, 8 were unchanged, and 6 were worse. Three patients were known to have died. One had auricular fibrillation, manifested an acute psychosis (normal spinal fluid) and died of pulmonary embolism two months after treatment. The second was badly decompensated at the time of treatment but considerably improved on discharge. He was not subsequently observed but was reported by his family to have died suddenly at home two months after discharge. The third patient seen in congestive failure maintained a considerable treatment improvement for five months, then relapsed and died of uremia.

It is noteworthy in this group that several of the patients with early diastolic murmurs lost them, and in others the murmur was perceptibly diminished over the 3 to 40 months' observation period. One patient with subacute bacterial endocarditis recovered and was still well after eight months.

Results in Regurgitation with Congestive Heart Failure.—Nine patients with aortic insufficiency were in congestive failure, and three with aneurysm and aortic insufficiency. These have been reported in detail elsewhere. None had received "preparatory" treatment, and all tolerated penicillin without interruption of the course. Recognizable Herxheimer effects were noted to include only mild fever at the start in four; some complained of substernal pain and oppression but had been subject to similar episodes before treatment. Ten were improved objectively and symptomatically at last observation and two had died. Both presented far advanced cardiac disease and died approximately two months after treatment, without autopsy.

Three of the 12 patients had been digitalized before admission. In the remaining nine, digitalis, mercurial diuresis and supportive measures were begun concurrently with the penicillin. This fact somewhat weights the conclusions as to improvement, though it does not vitiate those regarding absence of ill-effects from the antibiotic within the period of observation.

Results in Aneurysm with Regurgitation.—Nine patients presented aortic aneurysm with aortic insufficiency (seven of the ascending, one of the descending aorta, and one of the right innominate artery). Five had received antisyphilitic treatment other than penicillin. There were some complaints of substernal pain and oppression similar to those experienced previous to treatment. Treatment was not interrupted, but in one case was reduced from 50,000 units to 10,000 units every two hours.

Five of these patients have continued under observation for from 8 to 38 months, with one unchanged and four improved. Two are dead, one of aneurysmal rupture into the pericardial sac after 20 months, the other under unknown circumstances, after 14 months.

Results in Aneurysm.—All three patients (one with aneurysm of the ascending aorta, one, of the ascending and transverse aorta, and one, of the left common carotid artery) had had previous arsenical and bismuth treatment. One was lost to observation, one died under surgery (wiring) and one is unchanged. There were no untoward reactions while under penicillin treatment.

Effect on Angina Pectoris.—Four of five patients who had angina pectoris before penicillin were much improved after 3 to 28 months' follow-up. One died of pulmonary embolus as described above.

Type of Treatment Employed.—In the earliest cases the patients received amorphous penicillin, but by far the most were treated with crystalline penicillin G (sodium) under hospitalization on a round-the-clock schedule of 40,000 to 80,000 units every two hours to a total varying from 4,800,000 units in the earlier to 9,600,000 units in some of the later cases. Treatment was practically never interrupted and one instance of reduction in dosage has been mentioned. No preparatory treatment was given other than the relatively inadequate use of metal chemotherapy in the patients' past histories.

Effect of Treatment with Penicillin on Blood Serologic Tests.—It has already been mentioned that the reversal of blood serologic tests to negative is no longer generally regarded as a significant objective in the treatment of late syphilis. It is, moreover, ineffective, at least within our range of observation of our cardiovascular cases. Disregarding the six patients without follow-up, there were 85 (80.9 per cent) with positive reactions before treatment and 86 (81.9 per cent) with positive reactions after treatment. In 20 cases (19.1 per cent) reactions were negative before treatment and in 19 cases (18.1 per cent) negative after treatment. Although in seven of the cases with positive serologic tests for syphilis reactions became negative after treatment, in 8 of the original 20 cases with negative reactions penicillin treatment was followed by positive reactions. In 36, or 42.3 per cent of the cases with positive reactions, there was a drop of two or more tubes in the quantitative test; in 37, or 43.5 per cent, there was no change. In 50, or 45.2 per cent of 111 cases with positive reactions, the patients also had central nervous system syphilis. Although the number of cases is not large, it appears that penicillin did not influence the serologic tests for syphilis to any significant degree. The high incidence of central nervous system syphilis in this material is in agreement with the findings of the Cooperative Clinical Group.[1b] They found that 45 per cent of 326 patients with cardiovascular syphilis showed concomitant clinical or laboratory evidence of neurosyphilis.

CONCLUSIONS

While it is recognized that conditions of control and observational follow-up in this series of 111 patients with various forms of cardiovascular syphilis cannot be adequate, the material seems to justify certain tentative conclusions suggesting a marked advance introduced by penicillin into the treatment of this phase of syphilis.

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Our series shows little evidence that significant therapeutic shock occurs in the full-dosage use of crystalline penicillin G on a two-hour round-the-clock schedule of 40,000 to 80,000 units per injection, to a total of 4,800,000 to 9,600,000 units, without conventional heavy metal "preparation."

Evidence of vasculotoxic effect is also lacking in patients thus treated with penicillin.

We were unable to recognize any unequivocal cases of therapeutic paradox, even in patients so badly damaged that it might have been expected. The deaths were largely explained on other grounds.

Penicillin is admirably tolerated by the decompensated heart, with clinical improvement in a high proportion of cases.

Anginal pain was relieved without recognizable shock or paradox in four out of five cases.

In patients with syphilitic aortitis "uncomplicated," observed for from 3 to 58 months, one-third were improved, one-half were unchanged and only one-sixth were worse (one dead of bronchopneumonia).

Among patients with aortitis with regurgitation, 64 per cent were improved, 20 per cent unchanged and 16 per cent were worse.

Of patients with aneurysm with regurgitation the numbers were too small for analysis, but four of five kept under observation improved.

Of three with large saccular aneurysms, one lapsed from observation, one died in a wiring operation and one was unchanged.

The advocated treatment includes hospitalization, two-hour schedule, crystalline penicillin G, 4,800,000 to 9,600,000 units in 40,000 to 80,000 unit individual doses, but procaine penicillin may be given to hospitalized patients on a 600,000 unit single or 300,000 unit two-injection daily schedule for equal total dosage. The ambulatory use of this salt is under investigation. By present standards, repetition of courses in excess of two of 9,000,000 units each seems unnecessary.

The blood serologic results of penicillin treatment in this series are virtually nil, as might be expected from experience with other aspects of late syphilis.

The concomitant or subsequent use of heavy metal was not studied in this series but seems on general experiential grounds to be unnecessary.

Authors and Editors.—The author's job is to convey something from himself to his reader so well that the message conveyed will be gladly received and recognized for what it is. This is not a simple task; and it is not true that any set of words will do it, for there are no indifferent words. Every word of an article does good or ill: sections, paragraphs, sentences, phrases, words, or even parts of a word are evil if they can be done without. They make an article longer than it need be and the potential reader may decide that it is too long to attempt; they raise issues not connected with the main theme and so lessen the reader's enthusiasm and concentration; they irritate the fastidious and critical, the very people whose judgment and comments the author should particularly wish to enlist; and, worst of all, they may obscure the meaning. Editors who shorten articles often plead lack of space, but their real justification is the harm done by everything that can be done without.—J. W. Howie, M.D. On Writing to Be Read, *Lancet*, Aug. 25, 1951.

CLINICAL NOTES

SWINEHERD'S DISEASE (ASEPTIC MENINGITIS) DUE TO LEPTOSPIRA POMONA

J. H. Coffey, M.D.
I. Dravin, M.D.
and
W. C. Dine, M.D., Amarillo, Texas

The following case report is believed to be the first report of a case of swineherd's disease (aseptic meningitis) due to Leptospira pomona occurring in this area. There was an outbreak of swineherd's disease due to Lept. pomona recently in Alabama. We communicated with Dr. Morris Schaeffer, medical officer in charge of the Virus and Rickettsia Section, Communicable Disease Center, Montgomery, Ala, for further information on this disease. Dr. Schaeffer sent us the following excellent discussion of this subject:

In this country we have been accustomed to thinking of leptospirosis only in the form of Weil's disease, producing severe liver damage with jaundice and causing a high mortality rate. The causative agent of this disease entity is usually ascribed to Lept. icterohaemorrhagiae, but it has been recognized for some time that another leptospiral agent, designated as Lept. canicola, which usually affects dogs, can also affect man and produce a milder infection with or without jaundice.

In Holland and Switzerland particularly, as well as in other parts of the world, it has been thought for some time that leptospirosis may produce only mild systemic symptoms, but it is frequently associated with such illnesses as aseptic meningitis, in which the spinal fluid findings are similar to those found in the viral encephalitides or poliomyelitis. Current studies indicate that other leptospiras, particularly Lept. pomona, associated in nature principally with hogs and cattle, quite frequently produce a mild systemic infection with aseptic meningitis as the predominant syndrome. For many years such a disease was found to be associated especially with pig tenders and thus the name swineherd's disease. The etiology of this disease has been thought to be due to a virus, but the evidence is becoming stronger that it is probably due to leptospiral infection. The leptospiras are not easily isolated from such cases, but there have been a few instances in which the spinal fluid of patients examined very early in the disease have yielded the organisms. In nearly all of these cases, however, leptospiral agglutination tests run on serum specimens from acute and convalescent cases have shown remarkably high increases in titer. Although occasionally other leptospiras may be involved, the majority of cases studied recently appear to be associated with Lept. pomona.

In the outbreak which we studied in south Alabama, there was definite association of persons who swam in a creek which was contaminated by hogs dying of, presumably, leptospiral infection with this disease. We arrived too late to sample the hogs present during that period, since most of them had been marketed, but serologic tests on a few of the remaining ones indicated that the infection was prevalent. Moreover, the majority of persons who were affected had a significantly high titer against Lept. pomona—thus our conclusions.

From the Medical Service, Veterans Administration Hospital.

Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or the conclusions drawn by the authors.

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Dr. Schaeffer quoted several papers [1] as sources of information concerning leptospirosis and swineherd's disease. Beeson, Hankey and Cooper [2] point out that iridocyclitis may occur as a late sequel to acute systemic leptospiral infection, the interval between the initial infection and the ocular inflammation varying from three weeks to one year but being most commonly four to eight months. They carried out serologic tests for leptospirosis on patients with iridocyclitis at the Grady Memorial Hospital, Atlanta. One patient was found whose serum agglutinated Lept. pomona in high dilution. In September, 1949, shortly after starting work as a meat cutter in an Atlanta abattoir, this patient became ill with "influenza," the symptoms being severe headache, shaking chills, fever, and nausea. The attack lasted for 10 days. On April 1, 1950, an iridocyclitis developed in the patient, which subsided slowly on symptomatic treatment over a period of about a month.

Penicillin has been found valuable in the treatment of Weil's disease. Aureomycin has not had a thorough trial in the treatment of leptospirosis in man but has been found to cure leptospirosis in animals.[3]

REPORT OF A CASE

A white man, 27, entered the hospital on Aug. 23, 1950. Fever, headache, chills, and generalized aches and pains had developed a week before admission. The patient had received penicillin the day after the onset of the illness. After this the fever and chills cleared, but the patient continued to have bitemporal headaches, dizziness, nausea, and occasional vomiting. The physical examination findings, including a thorough neurological examination, were normal. The patient was employed at Palo Duro State Park. His work consisted of herding cattle and doing odd jobs around the park.

X-Ray and Laboratory Findings.—A chest x-ray showed normal condition. A blood count showed 6,100 white cells, of which 46% were neutrophils, and 13.4 gm. of hemoglobin. Urin. lysis findings were normal. The spinal fluid on admission was cloudy, with 980 cells per cubic millimeter, 86% of which were lymphocytes and 14% neutrophils. The protein was 98 mg. per 100 cc. and the initial pressure 280 mm. of water.

Course in Hospital.—The patient was afebrile throughout his stay. His headache cleared the day after admission, and he was asymptomatic until discharge. Spinal fluids taken on Sept. 1, Sept. 8, and Oct. 2, showed cell counts and proteins of 318 per cubic millimeter and 78 mg. per 100 cc., 164 per cubic millimeter and 116 mg. per 100 cc., and 9 per cubic millimeter and 49 mg. per 100 cc. respectively.

Several serum specimens were sent to the Army Medical Center, Washington, D. C. They were found positive for leptospirosis at diagnostic titers by both complement fixation and agglutination tests. The specific organism was Lept. pomona.

SUMMARY

A case of swineherd's disease due to Leptospira pomona with the clinical picture of aseptic meningitis is reported. As more agglutination tests for Lept. pomona are done in cases of iridocyclitis, aseptic meningitis and influenza-like diseases, this pathogen will probably be found to be more frequent and widespread than heretofore believed.

Veterans Administration Hospital (Dr. Coffey).

1. Gsell, O.: Clinic on the Leptospiroses, Ergebn. inn. Med. u. Kinderh. **1**: 367, 1949. Yager, R. H.; Gochenour, W. S., Jr., and Wetmore, P. W.: Recurrent Iridocyclitis of Horses, J. Am. Vet. M. A. **117**: 207, 1950. Gochenour, W. S., Jr.; Yager, R. H., and Wetmore, P. W.: Antigenic Similarity of Bovine Strains of Leptospirae (United States) and Leptospira Pomona, Proc. Soc. Exper. Biol. & Med. **74**: 199, 1950. Gsell, O.: Leptospirosis Pomona: Swineherd's Disease, Schweiz. med. Wchnschr. **76**: 237, 1946.

2. Beeson, P. B.; Hankey, D. D., and Cooper, C. F., Jr.: Leptospiral Iridocyclitis: Evidence of Human Infection with Leptospira Pomona in United States, J. A. M. A. **145**: 229 (Jan. 27) 1951.

3. Conn, H. F.: Current Therapy 1950: Latest Approved Methods of Treatment for the Practicing Physician, Philadelphia, W. B. Saunders Company, 1950, p. 50.

COUNCIL ON PHARMACY AND CHEMISTRY

The following abstract of recent nomenclature decisions of the Council is authorized for publication.

R. T. STORMONT, M.D., *Secretary.*

NEW GENERIC AND BRAND NAMES RECOGNIZED BY THE COUNCIL

The Council collaborates with manufacturers in the selection of generic and brand names for marketed drug preparations presented for acceptance and also for new products still under development or clinical trial. The last report on such names appeared in THE JOURNAL, July 7, 1951, p. 927.

The following abstract lists the generic designation, the chemical name, where necessary for information, and the recognized brand name or names under which the preparations are available. In general, a generic name should bear recognizable relation to the chemical name and conform as closely as consistent with brevity and practicality to existing systems of scientific nomenclature. The chief requirement for a brand name is that it should not be therapeutically suggestive.

CORTICOTROPIN for pituitary adrenocorticotropic hormone: Acthar (The Armour Laboratories)

CYCLAMATE CALCIUM for calcium cyclohexylsulfamate: Sucaryl Calcium (Abbott Laboratories)

INVERT SUGAR for a mixture of dextrose and levulose prepared by hydrolysis of sucrose: Travert (Baxter Laboratories, Inc.)

MERAGIDONE SODIUM for the sodium salt of anhydro-N-(beta-methoxy-gamma-hydroxymercuripropyl)-2-pyridone-5-carboxylic acid—theophylline: Merdroxone Sodium (Winthrop-Stearns, Inc.)

MERETHOXYLLINE SODIUM for the sodium salt of ortho-(N-gamma-hydroxymercuri-beta-hydroxyethoxypropylcarbamido)-phenoxyacetic acid combined with theophylline: Dicurin Sodium (Eli Lilly & Company)

METHANTHELINE BROMIDE for β-diethylaminoethylxanthene-9-carboxylate methobromide: Banthine Bromide (G. D. Searle & Company)

METHORPHINAN HYDROBROMIDE for dl-3-hydroxy-N-methylmorphinan hydrobromide: Dromoran Hydrobromide (Hoffmann-LaRoche, Inc.)

METHYLANDROSTENEDIOL for 17-methyl-Δ5-androstenediol-3β, 17β: Methostan (Schering Corporation) and Stenediol (Organon, Inc.)

NITROFURANTOIN for N-(5-nitro-2-furfurylidene)-1-aminohydantoin: Furadantoin (Eaton Laboratories, Inc.)

NPH INSULIN for modified neutral protamine zinc insulin: NPH-Iletin (Eli Lilly & Company)

POLYMYXIN B SULFATE for the sodium salt of polymyxin B: Aerosporin Sulfate (Burroughs Wellcome & Company, Inc.)

THIAMYLAL SODIUM for the sodium salt of 5-allyl-5-(1-methylbutyl)-2-thiobarbituric acid: Surital Sodium (Parke, Davis & Company)

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COUNCIL ON FOODS AND NUTRITION

The following statement has been accepted by the Council on Foods and Nutrition.

JAMES R. WILSON, M.D., *Secretary.*

ASCORBIC ACID CONTENT OF TOMATO JUICE

The Council on Foods and Nutrition has recognized for many years the importance of making available dependable sources of vitamin C. The value of citrus fruit and tomatoes as sources of vitamin C is well known, and at the present time the Council considers for acceptance orange juice having a natural ascorbic acid content of at least 40 mg. per 100 ml. when packed and grapefruit juice having at least 30 mg. per 100 ml. when packed.

The Council has decided to consider for acceptance tomato juice (canned or frozen) which has at the time of processing a natural content of ascorbic acid of at least 17.5 mg. per 100 ml. This decision is based on the consideration of the reasonably expected level of ascorbic acid that should result from the processing by modern methods of carefully selected high-grade tomatoes.

ACCEPTED FOODS

The following products, intended for use in low sodium and other therapeutic diets, have been accepted as conforming to the rules of the Council. Data regarding composition represent the best available information, which is based on submitted reports of analyses. The Council has requested continuing analytical studies, especially of the sodium content of products intended for use in low sodium diets, because of the natural variations in the composition of processed foods.

JAMES R. WILSON, M.D., *Secretary.*

Haxton Foods, Inc., Oakfield, New York.

BLUE BOY BRAND DIETETIC PACK APPLE SAUCE consists of apples which are processed and packed in water without any added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 11.3%, moisture 88.7%, ash 0.17%, fat (ether extract) 0.13%, protein (N × 6.25) 0.15%, crude fiber 0.57%, carbohydrate 10.28%, sodium 1.6 mg./100 Gm.

Calories.—0.43 per gram; 12 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK CREAM STYLE CORN consists of Golden Cross variety corn, packed in water without any added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 22.7%, moisture 77.3%, ash 0.56%, fat (ether extract) 1.06%, protein (N × 6.25) 2.56%, crude fiber 0.32%, carbohydrate 18.20%, sodium 3.20 mg./100 Gm.

Calories.—0.93 per gram; 26 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK DICED BEETS consists of Detroit dark red beets, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 6.2%, moisture 93.8%, ash 0.44%, fat (ether extract) 0.05%, protein (N × 6.25) 0.76%, crude fiber 1.41%, carbohydrate 4.54%, sodium 19.40 mg./100 Gm.

Calories.—0.22 per gram; 6 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK DICED CARROTS consists of Red Cored Chantenay carrots, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 6.56%, moisture 93.44%, ash 0.48%, fat (ether extract) 0.06%, protein (N × 6.25) 0.78%, crude fiber 0.60%, carbohydrate 4.64%, sodium 50.1 mg./100 Gm.

Calories.—0.22 per gram; 6 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK GREEN BEANS consists of Tendergreen variety beans, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 5.2%, moisture 94.8%, ash 0.23%, fat (ether extract) 0.11%, protein (N × 6.25) 0.88%, crude fiber 0.53%, carbohydrate 3.45%, sodium 1.02 mg./100 Gm.

Calories.—0.18 per gram; 5 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK PEAS consists of peas (Surprise variety), packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 11.7%, moisture 88.3%, ash 0.35%, fat (ether extract) 0.20%, protein (N × 6.25) 3.14%, crude fiber 1.34%, carbohydrate 6.67%, sodium 8.58 mg./100 Gm.

Calories.—0.41 per gram; 12 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK PEAS AND CARROTS consists of the vegetables, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 8.3%, moisture 91.7%, ash 0.33%, fat (ether extract) 0.16%, protein (N × 6.25) 1.95%, crude fiber 0.99%, carbohydrate 4.87%, sodium 14.90 mg./100 Gm.

Calories.—0.28 per gram; 8 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK SPINACH consists of Northland-Viking spinach, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 5.7%, moisture 94.3%, ash 1.14%, fat (ether extract) 0.31%, protein (N × 6.25) 1.83%, crude fiber 0.60%, carbohydrate 1.82%, sodium 9.10 mg./100 Gm.

Calories.—0.17 per gram; 5 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK SLICED BEETS consists of Detroit dark red beets, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 8.0%, moisture 92.0%, ash 0.46%, fat (ether extract) 0.05%, protein (N × 6.25) 0.90%, crude fiber 0.53%, carbohydrate 6.06%, sodium 46.50 mg./100 Gm.

Calories.—0.28 per gram; 8 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK WAX BEANS consists of Kinghorn variety wax beans, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 4.6%, moisture 95.4%, ash 0.24%, fat (ether extract) 0.09%, protein (N × 6.25) 0.82%, crude fiber 0.54%, carbohydrate 2.91%, sodium 0.80 mg./100 Gm.

Calories.—0.15 per gram; 4 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK WHOLE KERNEL CORN consists of Tendermost variety corn, packed in water without any added salt.

Analysis (submitted by manufacturer).—Total solids 17.4%, moisture 82.6%, ash 0.38%, fat (ether extract) 0.51%, protein (N × 6.25) 2.04%, crude fiber 0.33%, carbohydrate 14.14%, sodium 1.2 mg./100 Gm.

Calories.—0.69 per gram; 20 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK CORN-ON-THE-COB consists of Golden Cross variety corn, packed in water without any added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 34.7%, moisture 65.3%, ash 0.59%, fat (ether extract) 1.45%, protein (N × 6.25) 3.33%, crude fiber 0.91%, carbohydrate 28.42%, sodium 0.85 mg./100 Gm.

Calories.—1.40 per gram; 40 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK LIMA BEANS consists of Thorogreen Baby Lima variety beans, packed in water without any added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 19.5%, moisture 80.5%, ash 0.75%, fat (ether extract) 0.28%, protein (N × 6.25) 5.80%, crude fiber 1.58%, carbohydrate 11.09%, sodium 10.32 mg./100 Gm.

Calories.—0.70 per gram; 20 per ounce.

Use.—For use in low sodium and other therapeutic diets.

BLUE BOY BRAND DIETETIC PACK WHOLE BEETS consists of Detroit dark red beets, packed in water without any added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 10.6%, moisture 89.4%, ash 0.51%, fat (ether extract) 0.05%, protein (N × 6.25) 1.14%, crude fiber 0.71%, carbohydrate 8.19%, sodium 36.00 mg./100 Gm.

Calories.—0.38 per gram; 11 per ounce.

Use.—For use in low calorie, low sodium and other therapeutic diets.

The following product has been accepted as conforming to the rules of the Council.

JAMES R. WILSON, M.D., *Secretary.*

Beech-Nut Packing Company, Canajoharie, N. Y.

BEECH-NUT STRAINED ORANGE PUDDING. Ingredients: Orange juice, milk, sugar, rice, cornstarch, egg yolk, lemon juice, vanilla, salt and sufficient water for preparation.

Analysis (submitted by manufacturer).—Total solids 28.06%, moisture 71.94%, ash 0.76%, fat (ether extract) 1.01%, protein (N × 6.25) 1.65%, crude fiber 0.43%, carbohydrate other than crude fiber (by difference) 24.21%.

Vitamins and Minerals	Mg. per 100 Gm.
Thiamine	0.024
Riboflavin	0.088
Nicotinic acid	0.16
Ascorbic acid	13.17
Crude carotene	0.15
Calcium	43.0
Phosphorus	43.0
Iron (total)	0.39
Iron (available)	0.32
Copper	0.07

Calories.—1.13 per gram; 32.0 per ounce.

Use.—For use in the feeding of infants and young children.

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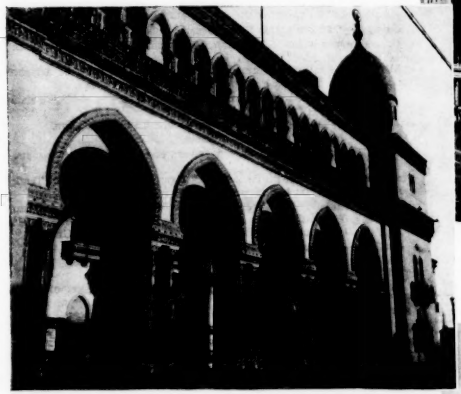
LOS ANGELES

Right: The Biltmore Hotel, where the House of Delegates will meet.

Below: The Al Malaikah Temple, where the clinical presentations, lectures, television, and motion pictures will be presented. The entrance to this temple will be through the Shrine Convention Hall, which is adjacent, and where the scientific exhibit will be located.

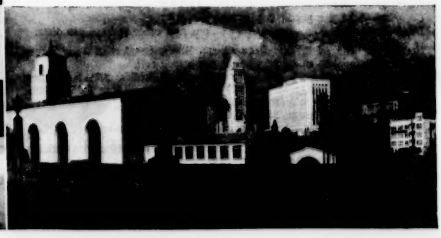


Below: The Los Angeles County Hospital, which has accommodations for 2,452 patients.

Below: Huntington Memorial Library and Art Gallery at Stratford and Oxford Drives in San Marino, a city of beautiful homes, 10 miles east of Los Angeles.

Below left: The approach to U. C. L. A. as seen from Hilgard Avenue.

Below right: Part of the new Union Station with the Civic Center in the background



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THE CLINICAL SESSION

AMERICAN MEDICAL ASSOCIATION

Los Angeles, Calif., Dec. 4-7, 1951

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The clinical session of the American Medical Association will be held in Los Angeles, Calif., Dec. 4-7, 1951.

The House of Delegates will convene at 10 a. m., Tuesday, December 4. In the House the representation of the various constituent associations for the clinical session in 1951 is as follows:

Alabama	2	Maryland	3
Arizona	1	Massachusetts	7
Arkansas	2	Michigan	6
California	11	Minnesota	4
Colorado	2	Mississippi	2
Connecticut	3	Missouri	4
Delaware	1	Montana	1
District of Columbia	2	Nebraska	2
Florida	3	Nevada	1
Georgia	3	New Hampshire	1
Idaho	1	New Jersey	6
Illinois	10	New Mexico	1
Indiana	4	New York	23
Iowa	3	North Carolina	3
Kansas	2	North Dakota	1
Kentucky	3	Ohio	8
Louisiana	2	Oklahoma	2
Maine	1	Oregon	2
Pennsylvania	12	Washington	3
Rhode Island	1	West Virginia	2
South Carolina	2	Wisconsin	3
South Dakota	1	Wyoming	1
Tennessee	3	Alaska	1
Texas	7	Hawaii	1
Utah	1	Isthmian Canal Zone	1
Vermont	1	Puerto Rico	1
Virginia	3		

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Medical Corps of the Air Force, the Public Health Service and the Veterans Administration are entitled to one delegate each.

The Scientific Program will open Tuesday, December 4, starting at 2 p. m., and will continue throughout the afternoon of that day. The program will continue on Wednesday and Thursday mornings and afternoons, December 5 and 6, and on Friday morning, December 7, closing at 12 noon.

The Registration Bureau, which will be located in the Shrine Convention Hall, will be open from 8:30 a. m. until 5:30 p. m., Tuesday, Wednesday and Thursday, December 4-6, and from 8:30 a. m. to 12:00 noon, Friday, December 7.

JOHN W. CLINE, President.
F. F. BORZELL, Speaker, House of Delegates.
GEORGE F. LULL, Secretary.

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OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1951-1952

PRESIDENT—John W. Cline, San Francisco.

PRESIDENT-ELECT—Louis H. Bauer, Hempstead, N. Y.

VICE PRESIDENT—Oscar B. Hunter, Washington, D. C.

SECRETARY AND GENERAL MANAGER—George F. Lull, Chicago.

ASSISTANT SECRETARY—Ernest B. Howard, Chicago.

TREASURER—J. J. Moore, Chicago.

SPEAKER, HOUSE OF DELEGATES—F. F. Borzell, Philadelphia.

VICE SPEAKER, HOUSE OF DELEGATES—James R. Reuling, Bayside, N. Y.

EDITOR—Austin Smith, Chicago.

BUSINESS MANAGER—Thomas R. Gardiner, Chicago.

BOARD OF TRUSTEES—Dwight H. Murray, Chairman, Napa, Calif., 1952; E. J. McCormick, Toledo, Ohio, 1952; Edwin S. Hamilton, Kankakee, Ill., 1953; Gunnar Gundersen, La Crosse, Wis., 1953; David B. Allman, Atlantic City, N. J., 1954; F. J. L. Blasingame, Wharton, Texas, 1954; L. W. Larson, Bismarck, N. D., 1955; Thomas P. Murdock, Meriden, Conn., 1955; Walter B. Martin, Norfolk, Va., 1956; the President and the President-Elect.

STANDING COMMITTEES OF THE HOUSE OF DELEGATES

JUDICIAL COUNCIL—H. L. Pearson, Jr., Miami, Fla., 1952; J. B. Lukins, Louisville, Ky., 1953; Edward R. Cunniffe, Chairman, New York, 1954; Louis A. Buie, Rochester, Minn., 1955; Walter F. Donaldson, Pittsburgh, 1956; George F. Lull, Secretary, Chicago.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS—H. G. Weiskotten, Chairman, Skaneateles, N. Y., 1952; Victor Johnson, Rochester, Minn., 1953; W. L. Pressly, Due West, S. C., 1954; Harvey B. Stone, Baltimore, 1955; Guy A. Caldwell, New Orleans, 1956; Russell L. Haden, Crozet, Va., 1957; F. D. Murphy, Lawrence, Kan., 1958; Donald G. Anderson, Secretary, Chicago.

COUNCIL ON SCIENTIFIC ASSEMBLY—Stanley P. Reimann, Philadelphia, 1952; Alphonse McMahon, St. Louis, 1953; Charles H. Phifer, Chicago, 1954; Carl A. Lincke, Carrollton, Ohio, 1955; Michael E. DeBakey, Houston, Texas, 1956; Henry R. Viets, Chairman, Boston, 1957; Samuel P. Newman, Denver, 1958; Louis H. Bauer, Hempstead, N. Y., ex officio.

COUNCIL ON MEDICAL SERVICE—Elmer Hess, Erie, Pa., 1952; Thomas A. McGrath, Brooklyn, 1952; J. D. Hamer, Phoenix, Ariz., 1953; James R. McVay, Chairman, Kansas City, Mo., 1953; H. B. Mulholland, Charlottesville, Va., 1954; Joseph D. McCarthy, Omaha, 1954; E. L. Henderson, Louisville, Ky.; John W. Cline, San Francisco; David B. Allman, Atlantic City, N. J.; Mr. Thomas A. Hendricks, Secretary, Chicago.

COMMITTEE ON CONSTITUTION AND BY-LAWS—J. S. Stevenson, Tulsa, Okla., 1952; S. H. Osborn, Hartford, Conn., 1953; F. S. Winslow, Rochester, N. Y., 1954; B. E. Pickett Sr., Carrizo Springs, Texas, 1955; L. A. Buie, Chairman, Rochester, Minn., 1956; E. S. Hamilton, Kankakee, Ill.; the President and the Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE BOARD OF TRUSTEES

COUNCIL ON PHARMACY AND CHEMISTRY—E. M. K. Geiling, Chicago, 1951; S. W. Clausen, Rochester, N. Y., 1951; Paul R. Cannon, Chicago, 1951; W. C. Cutting, San Francisco, 1952; Joseph Stokes Jr., Philadelphia, 1952; C. Guy Lane, Boston, 1952; Carl A. Dragstedt, Chicago, 1952; James P. Leake, Washington, D. C., 1953; Keith S. Grimson, Durham, N. C., 1953; Henry K. Beecher, Boston, 1953; Morris Fishbein, Chicago, 1954; G. W. McCoy, New Orleans, 1954; Perrin H. Long, Baltimore, 1954; E. M. Nelson, Washington, D. C., 1954; Torald Sollman, Chairman, Cleveland, 1955; Isaac Starr, Philadelphia, 1955; Joseph Hayman, Cleveland, 1955; Robert T. Stormont, Secretary, Chicago.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION—A. C. Ivy, Chicago, 1951; Frank R. Ober, Boston, 1951; Frank D. Dickson, Kansas City, Mo., 1951; Howard A. Rusk, New York, 1952; Frank H. Krusen, Chairman, Rochester, Minn., 1952; Shields Warren, Boston, 1952; A. C. Cipollaro, New York, 1953; M. A. Bowie, Swarthmore, Pa., 1953; G. M. Piersol, Philadelphia, 1953; A. L. Watkins, Boston, 1953; W. W. Coblentz, Washington, D. C., 1954; W. J. Zeiter, Cleveland, 1954; Derrick Vail, Chicago, 1954; Ralph E. DeForest, Secretary, Chicago.

COUNCIL ON FOODS AND NUTRITION—Philip C. Jeans, Iowa City, 1951; C. A. Elvehjem, Madison, Wis., 1951; W. J. Darby, Nashville, Tenn., 1952; G. R. Cowgill, New Haven, Conn., 1952; C. S. Ladd, Washington, D. C., 1953; John B. Youmans, Nashville, Tenn., 1953; C. S. Davidson, Boston, 1954; Russell M. Wilder, Rochester, Minn., 1955; H. B. Lewis, Ann Arbor, Mich., 1955; James S. McLester, Chairman, Birmingham, Ala., 1955; Clement A. Smith, Boston, 1955; James R. Wilson, Secretary, Chicago.

COUNCIL ON INDUSTRIAL HEALTH—H. A. Vonachen, Peoria, Ill., 1951; W. A. Sawyer, Rochester, N. Y., 1951; James S. Simmons, Boston, 1951; R. T. Johnstone, Los Angeles, 1952; A. J. Lanza, Chairman, New York, 1952; C. D. Selby, Detroit, 1952; Warren F. Draper, Washington, D. C., 1953; O. A. Sander, Milwaukee, 1953; Henry H. Kessler, Newark, N. J., 1953; W. P. Shepard, San Francisco, 1954; Lloyd E. Hamlin, Chicago, 1954; Robert A. Kehoe, Cincinnati, 1954; E. J. McCormick, ex officio, Toledo, Ohio; C. M. Peterson, Secretary, Chicago.

COUNCIL ON NATIONAL EMERGENCY MEDICAL SERVICE—Harold C. Lueth, Omaha, 1951; James C. Sargent, Chairman, Milwaukee, 1952; Stafford Warren, Los Angeles, 1953; H. B. Wright, Cleveland, 1953; Harold S. Diehl, Minneapolis, 1954; Perrin H. Long, New York, 1954; A. A. Brindley, Toledo, Ohio, 1954; Frank H. Lahey, Boston, 1954; R. L. Sensenich, South Bend, Ind., 1954; R. L. Meiling, Columbus, Ohio; John W. Cline, ex officio, San Francisco; Mr. C. Joseph Stetler, Secretary, Chicago.

The Secretary, Assistant Secretary and Editor are ex officio members of all Standing Committees.

REGISTRATION

The Registration Bureau will be located in the Shrine Convention Hall. An information bureau will be operated in connection with the Registration Bureau.

Who May Register

Only Member and Service Fellows, Affiliate, Associate and Honorary Fellows, Active Members, medical students of approved medical schools who are certified to the Secretary of the Association by their respective deans, or interns or residents who are graduates of approved medical schools who are certified to the Secretary of the Association by the superintendents of their respective hospitals, and Invited Guests may register for the Scientific Assembly. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship and paid their Fellowship dues. Fellowship cards are sent to all Fellows after payment of annual dues and these pocket cards for 1950 or 1951 should be presented at the registration windows.

Active Members in good standing in the American Medical Association are those members of constituent state and territorial medical associations who hold the degree of Doctor of Medicine and are entitled to exercise the rights of active membership in their constituent associations, including the right to vote and hold office, and whose names and membership dues have been sent to the Secretary of the American Medical Association by the secretaries of the constituent medical associations. All active Members in good standing may register for the Scientific Assembly. Membership cards are sent to all Members after payment of annual dues and these pocket cards for 1950 or 1951 should be presented at the registration windows.

Register Early

Members and Fellows living in the Los Angeles area, as well as all other Members and Fellows who are in Los Angeles on Tuesday and Wednesday should register as early as possible.

The names and local addresses of those who register will be included in the issue of the *Daily Bulletin* appearing the next day. This will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Members and Fellows should fill out completely the spaces on both sections of the front of the registration card. These cards will be found on the tables.

Entries on the registration card should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin* which appears on Wednesday, Thursday and Friday mornings during the week of the session.

Members and Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with the pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it and supply the registrant with a badge and a copy of the official program.

Those Members or Fellows who have sent in for an advance registration card previous to the session should present at any window the yellow registration card which they received.

Registration for General Officers and Delegates

General officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly outside the Renaissance Room in the Biltmore Hotel on Tuesday, December 4, before registering with the Reference Committee on Credentials and are advised *not* to register at the Registration Bureau since registration cards have already been made out for their use. It will also be possible for them to register on Sunday, December 2, or Monday, December 3, in the office of the Secretary of the Association, in the Renaissance Room.

This arrangement is made for the convenience of members of the House of Delegates, which will convene on Tuesday morning at 10 o'clock in the Renaissance Room, Biltmore Hotel. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

Registration for Lay Executives

Lay executive secretaries of component and constituent associations may register any time Sunday or Monday, December 2 or 3, in the office of the Secretary of the Association or any time after 12 noon Tuesday, December 4, during the time of the session, at the House of Delegates registration desk in the Biltmore Hotel.

TRANSPORTATION

Railroad or Air Travel

It is suggested that those physicians who contemplate traveling to Los Angeles to attend the clinical session of the Association secure information concerning railroad and airplane travel directly from their local ticket agents, who are in a position to give them information regarding train or plane schedules and fares. None of this information is available at the Association offices in Chicago.

LOS ANGELES HOTELS

It is suggested that if hotel reservations have not yet been secured by physicians other than Delegates or Officers of the Association who expect to attend the Los Angeles sessions, such physicians fill in and send directly to the Chairman of the SUBCOMMITTEE ON HOTELS, 1151 South Broadway, Los Angeles 15, Calif., the application form which may be found on advertising page 36 of this issue of THE JOURNAL. Please do not send applications to the Association offices in Chicago.

MEETING PLACES

(See the street map on advertising page 36 in this issue of THE JOURNAL.)

GENERAL HEADQUARTERS, REGISTRATION BUREAU, SCIENTIFIC EXHIBIT, TECHNICAL EXHIBITS AND INFORMATION BUREAU: Shrine Convention Hall.

HOUSE OF DELEGATES: Renaissance Room, Biltmore Hotel.

SCIENTIFIC MEETINGS: Shrine Convention Hall.

Shrine Convention Hall is located at 700 West 32d Street.

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LOCAL COMMITTEE ON ARRANGEMENTS

General Chairman

WALTER SCOTT

Co-Chairman

J. LAFE LUDWIG

HONORARY CHAIRMEN

JOHN W. CLINE — H. GORDON MACLEAN

LEWIS A. ALESEN

EXECUTIVE ADVISORY COMMITTEE

R. O. BULLIS — L. C. BURWELL
WARREN WILSON — EWING L. TURNER
PAUL D. FOSTER — JOHN PAXTON

Subcommittee on Programs

CO-CHAIRMEN

WELLS C. COOK — R. VARIAN SLOAN
J. M. DE LOS REYES — LORENZ M. WALLER
JAMES J. MORROW — L. C. BURWELL

MEMBERS

SAMUEL AYRES JR. — WILLIAM H. OLDS
FRANK A. M. BRYANT — EDWARD C. ROSENOW JR.
WILLIAM D. EVANS — CARL F. RUSCHE
M. W. MCDOUGALL — WILLIAM H. SNYDER
NORMAN B. NELSON — EWING L. TURNER

Subcommittee on Television

HOWARD F. WEST, Chairman

EUGENE J. JOERGENSON — HAROLD K. MARSHALL
ARTHUR C. PATTISON — MR. LE ROY BRUCE
WALTER E. MACPHERSON — PHOEBUS BERMAN

Subcommittee on Radio

FRED GASPARD, Chairman

ELMER LILJEDAHL — STEVEN DEVIN

EDWARD NIPPERT

Subcommittee on Housing

WILLIAM QUINN, Chairman

T. JACKSON LAUGHLIN — BEN FREES

Subcommittee on Technical Exhibits

GEORGE CALDWELL, Chairman

JOHN B. MARR — ERIC ROYSTON
L. C. BURWELL — ELDON TICE

Subcommittee on Scientific Exhibits

RAFE CHAFFIN, Chairman

LAWRENCE ADAMS — ISAAC OLCH
ROGERS BARNES — MERLIN NEWKIRK

Subcommittee on Registration and Information

CO-CHAIRMEN

EVERETT LAMBERTSON — RICHARD BARTON
LUDWIG KAFTAN — M. COLEMAN HARRIS
HARRY BREITMAN — ROBERT KELLY
H. VERN SOPER — E. WALLAR ALSBERG
REID BEERS — EDISON BACON
HOLLIS SIDES — PUTNAM KENNEDY
ROBERT SHELDON — WILLIAM ZIMMERMAN
CECILE CHAVANNES — FRANK SCHADE
ROBERT STERN — JAMES REGAN
JOHN CASTER — DANIEL BELTZ
EDWIN S. WRIGHT — BURTON SMITH

WILLIAM WESSLY

Subcommittee on Women Physicians

DOROTHY JEAN LYONS, Chairman

ELIZABETH MASON HOHL — MARGARET ANN STORKAN

HOUSE OF DELEGATES

The House of Delegates will meet at 10 a. m., Tuesday, Dec. 4, 1951, in the Renaissance Room of the Biltmore Hotel.

The Reference Committee on Credentials will meet in the Galeria just outside the Renaissance Room at 8:30 a. m., Tuesday, Dec. 4, 1951. Credentials should be presented to the Reference Committee on Credentials as early as possible, so that the official roll of the House may be made up and so that the House of Delegates may organize promptly and proceed with its business. The Reference Committee on Credentials will also meet preceding each subsequent meeting of the House of Delegates.

Each delegate should present properly executed credentials signed by the president and the secretary of the constituent association or by the chairman and the secretary of the section he represents. Alternates presenting credentials should see that the delegates whose places they are to take have signed the alternate authorization.

Each delegate, before registering with the Reference Committee on Credentials, should register for the Scientific Assembly at a desk located near the Renaissance Room. Rooms have been provided for the use of committees of the House of Delegates. Reference committees are urged to have their meetings in these rooms and to announce the time of their meetings, so that any who are interested in referred matters may be able to appear before the committees.

Typists will be at the service of the members of the House of Delegates for preparing official reports, resolutions and motions in the Galeria near the entrance to the Renaissance Room.

There should be eight copies of all resolutions, written motions, etc., presented in the House, one copy for preservation in the minutes, six to go to the committee to which the matter may be referred and one to be used as "copy" for the Proceedings. There should be four copies of all reference committee reports. The eight copies or the four copies as the case may be must be handed to the Secretary at the time the matter is presented. Typists in attendance will gladly make these copies of the material on request.

MEETING ROOMS OF REFERENCE COMMITTEES

Reference Committee on—

Amendments to the Constitution and By-Laws	Conference Room 1
Executive Session	Renaissance Room
Hygiene and Public Health	Conference Room 11
Industrial Health	Sample Room 1221
Insurance and Medical Services	Sample Room 1350
Legislation and Public Relations	Conference Room 6
Medical Education	Conference Room 5
Medical Military Affairs	Sample Room 1346
Miscellaneous Business	Conference Room 9
Reports of Board of Trustees and Secretary	Conference Room 10
Reports of Officers	Sample Room 1348
Rules and Order of Business	Renaissance Room
Sections and Section Work	Sample Room 1223
Special	Sample Rooms 1228 and 1352

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MEMBERS OF HOUSE OF DELEGATES, CLINICAL SESSION, 1950

The following is a list of members of the House of Delegates:

ALABAMA—2
- D. G. Gill ... Montgomery
- George A. Denison ... Birmingham

ARIZONA—1
- Jesse D. Hamer ... Phoenix

ARKANSAS—2
- Rufus B. Robins ... Camden
- William R. Brooksher ... Fort Smith

CALIFORNIA—11
- Robertson Ward ... San Francisco
- Samuel J. McClendon ... San Diego
- Eugene F. Hoffman ... Los Angeles
- John W. Green ... Vallejo
- Lewis A. Alesen ... Los Angeles
- H. Gordon MacLean ... Oakland
- E. Vincent Askey ... Los Angeles
- Dwight L. Wilbur ... San Francisco
- Donald Cass ... Los Angeles
- Ralph B. Eusden ... Long Beach
- R. Stanley Kneeshaw ... San José

COLORADO—2
- George A. Unfug ... Pueblo
- William H. Halley ... Denver

CONNECTICUT—3
- Thomas J. Danaher ... Torrington
- Joseph H. Howard ... Bridgeport
- Creighton Barker ... New Haven

DELAWARE—1
- Charles E. Wagner ... Wilmington

DISTRICT OF COLUMBIA—2
- Hugh H. Hussey Jr. ... Washington
- Herbert P. Ramsey ... Washington

FLORIDA—3
- Louis M. Orr II ... Orlando
- Homer Lee Pearson Jr. ... Miami
- Herbert L. Bryans ... Pensacola

GEORGIA—3
- Charles H. Richardson Sr. ... Macon
- Benjamin H. Minchew ... Waycross
- Eustace A. Allen ... Atlanta

IDAHO—1
- Hoyt B. Woolley ... Idaho Falls

ILLINOIS—10
- Warren W. Furey ... Chicago
- Robert H. Hayes ... Chicago
- Fred H. Muller ... Chicago
- Mather Pfeiffenberger ... Alton
- Harlan A. English ... Danville
- Everett P. Coleman ... Canton
- Percy E. Hopkins ... Chicago
- Charles H. Phifer ... Chicago
- Willis I. Lewis ... Herrin
- Bernard Klein ... Joliet

INDIANA—4
- F. S. Crockett ... Lafayette
- William M. Cockrum ... Evansville
- H. G. Hamer ... Indianapolis
- A. S. Giordano ... South Bend

IOWA—3
- Gerald V. Caughlan ... Council Bluffs
- George Braunlich ... Davenport
- Julian E. McFarland ... Ames

KANSAS—2
- John M. Porter ... Concordia
- Laurence S. Nelson Sr. ... Salina

KENTUCKY—3
- J. Duffy Hancock ... Louisville
- J. B. Lukins ... Louisville
- Bruce Underwood ... Louisville

LOUISIANA—2
- James Q. Graves ... Monroe
- Val H. Fuchs ... New Orleans

MAINE—1
- Martyn A. Vickers ... Bangor

MARYLAND—3
- Jacob W. Bird ... Sandy Spring
- John Warner Parsons ... Baltimore
- Warde B. Allan ... Baltimore

MASSACHUSETTS—7
- Harold R. Kurth ... Lawrence
- Donald R. Hayes ... Springfield
- Lawrence R. Dame ... Greenfield
- Charles G. Hayden ... Boston
- Patrick J. Sullivan ... Dalton
- James M. Faulkner ... Boston
- John J. Curley ... Leominster

MICHIGAN—6
- L. G. Christian ... Lansing
- William A. Hyland ... Grand Rapids
- Ralph A. Johnson ... Detroit
- Wyman D. Barrett ... Detroit
- Willis H. Huron ... Iron Mountain
- R. L. Novy ... Detroit

MINNESOTA—4
- William W. Will ... Bertha
- George A. Earl ... St. Paul
- Frank J. Elias ... Duluth
- J. Arnold Bargen ... Rochester

MISSISSIPPI—2
- Felix J. Underwood ... Jackson
- James P. Wall ... Jackson

MISSOURI—4
- Robert E. Schlueter ... St. Louis
- James R. McVay ... Kansas City
- Warren L. Allee ... Eldon
- Howard B. Goodrich ... Hannibal

MONTANA—1
- Raymond F. Peterson ... Butte

NEBRASKA—2
- Karl S. J. Hohlen ... Lincoln
- Joseph D. McCarthy ... Omaha

NEVADA—1
- Roland W. Stahr ... Reno

NEW HAMPSHIRE—1
- Deering G. Smith ... Nashua

NEW JERSEY—6
- Joseph F. Londrigan ... Hoboken
- William F. Costello ... Dover
- J. Wallace Hurff ... Newark
- Aldrich C. Crowe ... Ocean City
- Elmer P. Weigel ... Plainfield
- L. Samuel Sica ... Trenton

NEW MEXICO—1
- John F. Conway ... Clovis

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NEW YORK—23
John J. Masterson ..... Brooklyn
Leo F. Simpson ..... Rochester
Thomas A. McGoldrick ..... Brooklyn
George W. Kosmak ..... New York
J. Stanley Kenney ..... New York
Peter J. DiNatale ..... Batavia
Andrew A. Eggston ..... Mount Vernon
Maurice J. Dattelbaum ..... Brooklyn
R. J. Azzari ..... New York
Peter M. Murray ..... New York
Joseph P. Henry ..... Rochester
Walter P. Anderton ..... New York
Albert F. R. Andresen ..... Brooklyn
Carlton E. Wertz ..... Buffalo
Herbert H. Bauckus ..... Buffalo
Leo F. Schiff ..... Plattsburgh
James R. Reuling Jr. ..... Bayside
Floyd S. Winslow ..... Rochester
Edward P. Flood ..... New York
Norman S. Moore ..... Ithaca
Harold F. R. Brown ..... Buffalo
Denver M. Vickers ..... Cambridge
Thomas M. Brennan ..... Brooklyn

NORTH CAROLINA—3
C. F. Strosnider ..... Goldsboro
B. O. Edwards ..... Asheville
Millard D. Hill ..... Raleigh

NORTH DAKOTA—1
Willard A. Wright ..... Williston

OHIO—8
L. Howard Schriver ..... Cincinnati
Clifford C. Sherburne ..... Columbus
Frank M. Wiseley ..... Findlay
Arthur A. Brindley ..... Toledo
Herbert B. Wright ..... Cleveland
Carl A. Lincke ..... Carrollton
George A. Woodhouse ..... Pleasant Hill
William M. Skipp ..... Youngstown

OKLAHOMA—2
John F. Burton ..... Oklahoma City
James Stevenson ..... Tulsa

OREGON—2
Edward H. McLean ..... Oregon City
Raymond M. McKeown ..... Coos Bay

PENNSYLVANIA—12
William L. Estes Jr. ..... Bethlehem
James L. Whitehill ..... Rochester
George S. Klump ..... Williamsport
Elmer Hess ..... Erie
James Z. Appel ..... Lancaster
Gilson C. Engel ..... Philadelphia
Mary L. C. Gloeckner ..... Conshohocken
Francis F. Borzell ..... Philadelphia
Harold B. Gardner ..... Pittsburgh
Charles L. Shafer ..... Kingston
Howard K. Petry ..... Harrisburg
Robert L. Schaeffer ..... Allentown

RHODE ISLAND—1
Charles L. Farrell ..... Pawtucket

SOUTH CAROLINA—2
William Weston Jr. ..... Columbia
Julian P. Price ..... Florence

SOUTH DAKOTA—1
H. Russell Brown ..... Watertown

TENNESSEE—3
William C. Chaney ..... Memphis
C. M. Hamilton ..... Nashville
Robert B. Wood ..... Knoxville

TEXAS—7
Joseph B. Copeland ..... San Antonio
Truman C. Terrell ..... Fort Worth
B. E. Pickett Sr. ..... Carrizo Springs
Edward H. Cary ..... Dallas
Robert B. Homan Jr. ..... El Paso
Allen T. Stewart ..... Lubbock
John K. Glen ..... Houston

UTAH—1
George M. Fister ..... Ogden

VERMONT—1
James P. Hammond ..... Bennington

VIRGINIA—3
Henry B. Mulholland ..... Charlottesville
John M. Emmett ..... Clifton Forge
J. Morrison Hutcheson ..... Richmond

WASHINGTON—3
Alvia G. Young ..... Wenatchee
Ross D. Wright ..... Tacoma
Raymond L. Zech ..... Seattle

WEST VIRGINIA—2
George F. Evans ..... Clarksburg
Walter E. Vest ..... Huntington

WISCONSIN—3
William D. Stovall ..... Madison
Dexter H. Witte ..... Milwaukee
Stephen E. Gavin ..... Fond du Lac

WYOMING—1
Roscoe H. Reeve ..... Casper

ALASKA—1
George G. Davis ..... Anchorage

HAWAII—1
Alfred S. Hartwell ..... Honolulu

ISTHMIAN CANAL ZONE—1
.....

PUERTO RICO—1
F. Sanchez-Castano ..... Vega Baja

DELEGATES FOR SECTIONS

ANESTHESIOLOGY
Henry S. Ruth ..... Haverford, Pa.

DERMATOLOGY AND SYPHILOLOGY
Everett C. Fox ..... Dallas, Texas

DISEASES OF THE CHEST
Hollis E. Johnson ..... Nashville, Tenn.

EXPERIMENTAL MEDICINE AND THERAPEUTICS
Edgar V. Allen ..... Rochester, Minn.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis A. Buie ..... Rochester, Minn.

GENERAL PRACTICE
Paul A. Davis ..... Akron, Ohio

INTERNAL MEDICINE
Charles T. Stone ..... Galveston, Texas

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Gordon F. Harkness ..... Davenport, Iowa

MILITARY MEDICINE
Russell C. Lee ..... Palo Alto, Calif.

NERVOUS AND MENTAL DISEASES
Percival Bailey ..... Chicago

OBSTETRICS AND GYNECOLOGY
Harvey B. Matthews ..... Brooklyn

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OPHTHALMOLOGY
William L. Benedict.....Rochester, Minn.

ORTHOPEDIC SURGERY
Edward L. Compere.....Chicago

PATHOLOGY AND PHYSIOLOGY
M. G. Westmoreland.....Chicago

PEDIATRICS
Julius H. Hess.....Chicago

PHYSICAL MEDICINE AND REHABILITATION
Frank H. Krusen.....Rochester, Minn.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
Stanley H. Osborn.....Hartford, Conn.

RADIOLOGY
B. R. Kirklin.....Rochester, Minn.

SURGERY, GENERAL AND ABDOMINAL
Grover C. Penberthy.....Detroit

UROLOGY
Jay J. Crane.....Los Angeles

GOVERNMENT SERVICES

United States Army.....George E. Armstrong
United States Navy.....Clarence J. Brown
United States Air Force.....Dan C. Ogle
United States Public Health Service.....W. Palmer Dearing
Veterans Administration.....Edward H. Cushing

SCIENTIFIC PROGRAM

SHRINE CONVENTION HALL

Tuesday afternoon, December 4

IN MAIN AUDITORIUM: GENERAL LECTURES

HENRY R. VIETS, Boston, Presiding

2:00 p. m. **Modern Aspect of Bronchoscopy.**
CHEVALIER L. JACKSON, Philadelphia.

2:30 p. m. **A Biological Interpretation of Economics.**
LEWIS A. ALESEN, Los Angeles.

3:00 p. m. **The Limitations of Sympathectomy in the Treatment of Diastolic Hypertension.**
GEZA DE TAKATS, Chicago.

IN MAIN AUDITORIUM: UROLOGY

WELLS C. COOK, Los Angeles, Presiding

4:00 p. m. **The Recognition of Urological Malignancy by the General Practitioner.**
THEODORE FETTER, Philadelphia.

4:30 p. m. **Posterior Urethritis in Female Children.**
CLARENCE V. HODGES, Portland, Ore.

5:00 p. m. **Clinical Aspects of Testicular Tumors.**
OLE J. JENSEN JR., Seattle.

IN CONFERENCE ROOM: GENERAL PRACTICE

L. CLIFFORD BURWELL, Los Angeles, Presiding

4:00 p. m. **Effect of ACTH In Ulcerative Colitis.**
JAMES A. HALSTEAD, Los Angeles.

4:30 p. m. **Hiatus Hernia.**
FRANKLIN R. NUZUM, Santa Barbara, Calif.

5:00 p. m. **New Concepts in Allergy.**
FRANK G. CRANDALL JR., Los Angeles.

IN SECOND FLOOR LOBBY: GENERAL SURGERY

JAMES J. MORROW, North Hollywood, Calif., Presiding

4:00 p. m. **Surgical Indications and Pre-Operative Management of Thyroidectomy.**
FRANK B. SETTLE, Long Beach, Calif.
WAYNE P. HANSON, Long Beach, Calif.

4:30 p. m. **Acute Abdominal Conditions in Children.**
WILLIAM H. SNYDER, Los Angeles.

5:00 p. m. **The Management of Gall Bladder Disease.**
JOHN BEAL, Los Angeles.

Wednesday morning, December 5

IN MAIN AUDITORIUM: GENERAL LECTURES

J. M. DE LOS REYES, Los Angeles, Presiding

9:00 a. m. **Effects of Chronic Hyperlipemia on the Vascular System of Humans.**
REX ALVORD, Tooele, Utah.

9:30 a. m. **A Twenty-Year Study of Chronic Alcoholic Addiction.**
TOM D. SPIES, Birmingham, Ala.

10:00 a. m. **The Differentiation of Hyperthyroidism and Anxiety.**
JACKSON A. SMITH, Houston, Texas.

IN MAIN AUDITORIUM: GENERAL PRACTICE (SURGICAL)

E. R. LAMBERTSON, Los Angeles, Presiding

11:00 a. m. **The Management of Appendiceal Peritonitis.**
CLARENCE J. BERNE, Los Angeles.

11:30 a. m. **Present Status of the Treatment of Varicose Veins.**
C. H. TALMAGE, Los Angeles.

12:00 noon **Impotence, Cause and Treatment.**
ELMER BELT, Los Angeles.

IN CONFERENCE ROOM: GENERAL PRACTICE (UROLOGIC)

CARL F. RUSCHE, Los Angeles, Presiding

11:00 a. m. **Avoiding Pitfalls in Urologic Diagnosis.**
HENRY M. WEYRAUCH, San Francisco.

11:30 a. m. **Recent Trends in Urologic Practice.**
W. J. MCMARTIN, Omaha.

12:00 noon **Management of Ureteral Stones.**
ROBERT J. PRENTISS, San Diego, Calif.

IN SECOND FLOOR LOBBY: CARDIOVASCULAR

WILLIAM D. EVANS, Los Angeles, Presiding

11:00 a. m. **Factors Influencing the Occurrence of Rupture of the Heart Following Coronary Occlusion.**
ROBERT W. OBLATH, Los Angeles.
DAVID C. LEVINSON, Los Angeles.
GEORGE C. GRIFFITH, Los Angeles.

11:30 a. m. **Problems Influencing the Dental Care of Patients Known to Have Heart Disease.**
JOHN R. FEENEY, Los Angeles.

12:00 noon **The Recognition of Correctible Types of Congenital Heart Disease.**
WILLIAM PAUL THOMPSON, Los Angeles.

Wednesday afternoon, December 5

IN MAIN AUDITORIUM: GENERAL LECTURES

B. O. RAULSTON, Los Angeles, Presiding

2:00 p. m. **The National Hospital Survey and Construction Program: Its Relationship to the Doctor.**
V. MORGAN HOGE, Washington, D. C.

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2:30 p. m. **Recent Advancement in the Medical Treatment of Cirrhosis of the Liver.**
SIDNEY A. PORTIS, Chicago.

3:00 p. m. **Industrial Medical Problems in the Atomic Energy Program.**
JOHN Z. BOWERS, Salt Lake City.

IN MAIN AUDITORIUM: OBSTETRICS AND GYNECOLOGY

FRANK A. M. BRYANT, Los Angeles, Presiding

4:00 p. m. **Is There Justification for so Many Ovariectomies Today?**
JAMES C. DOYLE, Los Angeles.

4:30 p. m. **Abnormal Vaginal Bleeding.**
CHARLES M. MALONE, Los Angeles.

5:00 p. m. **Routine Use of Episiotomy with a Description of the Continuous Knotless Repair.**
DONALD A. DALLAS, San Francisco.

IN CONFERENCE ROOM: DERMATOLOGY

SAMUEL AYRES JR., Los Angeles, Presiding

4:00 p. m. **Current Problems in the Diagnosis and Management of Syphilis.**
THOMAS H. STERNBERG, Los Angeles.

4:30 p. m. **Mycology in General Practice.**
JOHN WALTER WILSON, Los Angeles.

5:00 p. m. **Allergic Contact Dermatitis: Incidence Causes and Management.**
RALPH HERBERT LUIKART II, Santa Barbara, Calif.

IN SECOND FLOOR LOBBY: INDUSTRIAL MEDICINE AND SURGERY

WILLIAM H. OLDS, Los Angeles, Presiding

4:00 p. m. **Acute Head Injuries: Diagnosis and Treatment.** CARL RAND, Los Angeles.

4:30 p. m. **Treatment in the Primary Management of Burns.**
ALLYN J. MCDOWELL, Los Angeles.

5:00 p. m. **The Anatomical Interpretation of the Arthritides as a Basis for Diagnosis and Treatment.** J. VERNON LUCK, Los Angeles.

Thursday morning, December 6

IN MAIN AUDITORIUM: GENERAL LECTURES

EWING L. TURNER, Los Angeles, Presiding

9:00 a. m. **Therapy in Coccidiomycosis.**
ROGER O. EGEBERG, Sawtelle, Calif.

9:30 a. m. **Modern Appraisal of the Acute Abdomen.**
LYON H. APPLEBY, Vancouver, B. C., Canada.

10:00 a. m. **Newer Aspects of Cardio-Vascular Surgery.**
WILLIAM H. MULLER JR., San Francisco.

IN MAIN AUDITORIUM: MEDICINE

EDWARD C. ROSENOW, Pasadena, Calif., Presiding

11:00 a. m. **Recent Trends in the Treatment of Diabetes Mellitus.**
ROBERT M. SHELTON, Los Angeles.

11:30 a. m. **Use of Procaine Hydrochloride by Mouth for Gastro-Intestinal Disorders.**
DONALD C. BALFOUR, Los Angeles.

12:00 noon **Diagnosis and Advances in Treatment of the Nephrotic Syndrome.**
ROBERT R. COMMONS, Los Angeles.

IN CONFERENCE ROOM: EYE, EAR, NOSE AND THROAT

WILLIAM H. SNYDER, Los Angeles, Presiding

11:00 a. m. **Chronic Nasal Obstruction.**
ORVILLE COLE, Long Beach, Calif.

11:30 a. m. **Eye in General Practice.**
STEPHEN J. POPOVICH, Los Angeles.

12:00 noon **Nasal Fractures.**
GILBERT ROBERTS, Pomona, Calif.

IN SECOND FLOOR LOBBY: DISEASES OF THE CHEST

M. W. MCDOUGALL, Long Beach, Calif., Presiding

11:00 a. m. **Surgical Advancements for "Inoperable" Cancer of the Lung.**
BERT H. COTTON, Los Angeles.

11:30 a. m. **The Physiology and Management of Chest Injuries.** ELMER C. RIGBY, Los Angeles.

12:00 noon **The Surgical Treatment of Mitral Heart Disease.** JOHN C. JONES, Los Angeles.

Thursday afternoon, December 6

IN MAIN AUDITORIUM: GENERAL LECTURES

NORMAN B. NELSON, Los Angeles, Presiding

2:00 p. m. **Backache: Practical Methods of Diagnosis and Treatment.**
ROGER ANDERSON, Seattle.

2:30 p. m. **Recent Developments in the Problem of the Removal of Edema Fluid.**
ALBERT A. KATTUS, Los Angeles.

3:00 p. m. **Heart Disease Forty Years Ago and Now.**
PAUL DUDLEY WHITE, Boston.

IN MAIN AUDITORIUM: NEUROPSYCHIATRY

LORENZ M. WALLER, Los Angeles, Presiding

4:00 p. m. **Diagnosis and Treatment of Epileptic and Epileptoid Diseases.**
NICHOLAS BERCEL, Beverly Hills, Calif.

4:30 p. m. **Psychotherapy in General Practice.**
JOHN D. MORIARTY, Los Angeles.

5:00 p. m. **The Common Neurologic Diseases.**
KARL VON HAGEN, Los Angeles.

IN CONFERENCE ROOM: MEDICAL BANKS

WALTER MACPHERSON, Los Angeles, Presiding

4:00 p. m. **The Bone Bank: A Community Necessity.**
G. MOSSER TAYLOR, Los Angeles.

4:30 p. m. **Corneal Banks and Recent Developments in Ophthalmology.**
WARREN A. WILSON, Los Angeles.

5:00 p. m. **The Use of Blood Vessel Grafts and Reconstructive Procedures in Large Vessel Surgery.**
FRANK GERBODE, San Francisco.

IN SECOND FLOOR LOBBY: PEDIATRICS

R. VARIAN SLOAN, Glendale, Calif., Presiding

4:00 p. m. **Respiratory Disturbances of the Newborn.**
A. H. PARMALEE SR., Los Angeles.

4:30 p. m. **Poliomyelitis and the Coxsackie Virus.**
JOHN M. ADAMS, Los Angeles.

5:00 p. m. **Diagnosis and Management of Acute Rheumatic Fever.**
M. J. CARSON, Los Angeles.

Friday morning, December 7

IN MAIN AUDITORIUM: GENERAL LECTURES

STAFFORD WARREN, Los Angeles, Presiding

9:00 a. m. **Nephroptosis: Is This a Pathological Entity?**
ELMER HESS, Erie, Pa.

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9:30 a. m. **Modern Advances and Trend in Military Medicine.**
H. LAMONT PUGH, Washington, D. C.

10:00 a. m. **The Present Day Nervous Woman.**
EARL O. G. SCHMITT, San Jose, Calif.

IN MAIN AUDITORIUM: RADIOLOGY

JUSTIN STEIN, Los Angeles, Presiding

11:00 a. m. **Radiologic Evidences Which May Be Secured in Association with Upper Gastro-Intestinal Hemorrhage.**
JOHN W. CROSSAN, Los Angeles.
LOWELL S. GOIN, Los Angeles.
HAROLD P. TOMPKINS, Los Angeles.
HENRY C. CROZIER, Los Angeles.

11:30 a. m. **Developmental Anomalies in the Digestive Tract of the Newborn Which Require Surgical Intervention.**
RAY A. CARTER, Los Angeles.

12:00 noon **Radiation Therapy in Inflammatory Conditions.**
DONALD R. LAING, Pasadena, Calif.

IN CONFERENCE ROOM: ANESTHESIA AND PATHOLOGY

CHARLES MCCUSKEY, Glendale, Calif., Presiding

11:00 a. m. **Hospital Practice of Anesthesia.**
JOHN B. DILLON, Los Angeles.

11:30 a. m. **Office Practice of Anesthesia.**
F. E. LEFFINGWELL, Los Angeles.

12:00 noon **The Role of the Papanicolaou Procedure in the Diagnosis of Cancer.**
REUBEN STRAUS, Los Angeles.

IN SECOND FLOOR LOBBY: TRAUMATOLOGY AS RELATED TO CIVIL DEFENSE

ROBERT L. STERN, Beverly Hills, Calif., Presiding

11:00 a. m. **The American Physician: The Modern Minute Man.**
FRANK F. SCHADE, Los Angeles.

11:30 a. m. **Treatment of Bone and Joint Injuries in Major Disaster.**
PAUL E. MCMASTER, Los Angeles.

12:00 noon **Current Trends in Burn Treatment with Emphasis on Civil Defense.**
LEWIS F. ELLMORE, Los Angeles.

COLOR TELEVISION PROGRAM

IN COOPERATION WITH SMITH, KLINE AND FRENCH LABORATORIES

SHRINE CONVENTION HALL: THIRD FLOOR LOBBY

Tuesday morning, December 4

10:00-10:30 a. m. **Thyroidectomy.**
CONRAD BAUMGARTNER, Associate Professor of Surgery, College of Medical Evangelists.

10:40-11:20 a. m. **Axillary Dissection and Vein Resection with Radical Mastectomy.**
IAN MACDONALD, Associate Clinical Professor of Surgery, University of Southern California Medical School.

11:30 a. m.-12:00 noon **Cholecystectomy.**
J. NORTON NICHOLS, Clinical Professor of Surgery, College of Medical Evangelists.

Tuesday afternoon, December 4

2:00-4:00 p. m. **Diagnostic Methods of Cardiovascular Diseases.**

GEORGE C. GRIFFITH, Coordinator

1. **The Diagnostic Value of the History.**
GEORGE C. GRIFFITH, University of Southern California Medical School.

2. **The Diagnostic Value of the Physical Examination.**
GEORGE C. GRIFFITH, M. C. THORNER, and SIM P. DIMITROFF, Assistant Clinical Professors of Medicine, University of Southern California Medical School.

3. **Diagnostic Laboratory Methods: Blood Count, Sedimentation Rate, Antistreptolysin Titre.**
JACK A. SHEINKOPF, Assistant Clinical Professor of Medicine, University of Southern California Medical School.

4. **Method of Electrocardiography.**
WILLIAM P. THOMPSON, Clinical Professor of Medicine, and EUGENE B. LEVINE, Assistant Professor of Medicine, College of Medical Evangelists.

5. **Stethocardiograph.**
DAVID C. LEVINSON, Instructor in Medicine, University of Southern California Medical School.

Ballistocardiography and Electrofluorokymography.
EDWARD PHILLIPS, Instructor in Internal Medicine, College of Medical Evangelists.

6. **Oxygen Content of the Blood.**
RICHARD S. COSBY, Assistant Clinical Professor of Medicine, J. P. MEEHAN, Assistant Professor of Physiology, and ANDREW F. FARR, Graduate Student in Chemistry, University of Southern California Medical School.

7. **X-Ray Diagnosis.**
RAY A. CARTER, Professor of Radiology, GEORGE JACOBSON, Associate Professor of Radiology, University of Southern California Medical School, and LUCIUS A. COLLIER.

8. **Venous Pressure and Circulation Time.**
TRAVIS WINSOR, Assistant Clinical Professor of Medicine, University of Southern California Medical School.

9. **Vital Capacity and Maximal Breathing Capacity.**
RICHARD S. COSBY, Assistant Clinical Professor of Medicine, and WILLARD J. ZINN, Research Fellow in Medicine, University of Southern California Medical School.

Intermittent Positive Pressure Breathing.
TELFER REYNOLDS, Instructor in Medicine, University of Southern California Medical School.

10. **Master's Two-Step Test.**
STEPHEN R. ELEK, Assistant Clinical Professor of Medicine, and B. J. ALLENSTEIN, Instructor in Medicine, University of Southern California Medical School.

11. **Cardiac Catheterization.**
GEORGE C. GRIFFITH, Professor of Medicine, University of Southern California Medical School.
RICHARD S. COSBY, Assistant Clinical Professor of Medicine, University of Southern California Medical School.
DAVID C. LEVINSON, Instructor in Medicine, University of Southern California Medical School.

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WILLARD J. ZINN, Research Fellow in Medicine, University of Southern California Medical School.
SIM P. DIMITROFF, Assistant Clinical Professor of Medicine, University of Southern California Medical School.
ROBERT W. OBLATH, Instructor in Medicine, University of Southern California Medical School.
LAWRENCE HERMAN, Instructor in Medicine, University of Southern California Medical School.
TELFER REYNOLDS, Instructor in Medicine, University of Southern California Medical School.
MARY M. COSBY, Research Assistant in Medicine, University of Southern California Medical School.
VARNER JOHNS, Associate Dean, School of Medicine, College of Medical Evangelists.
HELEN OBERNOLTE.
LUCIUS A. COLLIER.

Angiocardiography.
GEORGE C. GRIFFITH, Professor of Medicine, University of Southern California Medical School.
WILLARD J. ZINN, Research Fellow in Medicine, University of Southern California Medical School.
VARNER JOHNS, Associate Dean, School of Medicine, College of Medical Evangelists.

Wednesday morning, December 5

9:00-9:30 a. m. **Total Abdominal Hysterectomy.**
HENRY N. SHAW, Clinical Professor of Obstetrics and Gynecology, University of Southern California Medical School.

9:40-10:20 a. m. **Caesarean Section or Vaginal Delivery.**
BERNARD J. HANLEY, Clinical Professor of Obstetrics and Gynecology, University of Southern California Medical School.

10:30-11:00 a. m. **Femoral Hernia (Henry Approach).**
EUGENE J. JOERGENSON, Associate Clinical Professor of Surgery, College of Medical Evangelists.

Wednesday afternoon, December 5

2:00-3:00 p. m. **Diabetic Clinic.**
HELEN MARTIN, Coordinator, Associate Professor of Medicine, University of Southern California Medical School.

1. **Transmetatarsal Amputations: Indications and Presentation of Patients.**
JAMES J. SHORT, Associate Professor of Medicine, College of Medical Evangelists.

2. **Pre-Diabetic Mothers with Large Babies.**
MORTON KRITZER, Instructor in Medicine, University of Southern California Medical School.

3. **Diabetic Coma: Highlights of the Newer Approach to Treatment.**
ROSS B. DENLINGER, JR., Instructor in Medicine, University of Southern California Medical School.

4. **Model Diabetic Instruction Class for Patients.**
JOSEPH OYSTER, Instructor in Medicine, University of Southern California Medical School.

3:00-4:00 p. m. **Medical Ward Rounds.**
Presentation of Selected Cases in the Los Angeles County General Hospital.
Arranged by LEWIS T. BULLOCK, Associate Clinical Professor of Medicine, University of Southern California Medical School, and WILLIAM D. EVANS, Assistant Professor of Medicine, College of Medical Evangelists.

Thursday morning, December 6

9:00-9:40 a. m. **Inguinal Hernia: Repair.**
CLARENCE J. BERNE, Clinical Professor of Surgery, University of Southern California Medical School.

9:50-10:20 a. m. **Pinning of Hip.**
ALONZO J. NEUFELD, Associate Clinical Professor of Orthopedic Surgery, College of Medical Evangelists.

10:30-11:00 a. m. **Bunion Repair or Open Reduction: Fracture of a Long Bone.**
VERNON P. THOMPSON, Associate Clinical Professor of Orthopedic Surgery, University of Southern California Medical School.

Thursday afternoon, December 6

2:00-2:30 p. m. **Tumor Board in Session.**
HARRY P. JACOBSON, Moderator, Emeritus Associate Clinical Professor of Medicine, University of Southern California Medical School.

Members of Board: DRS. C. J. BERNE, University of Southern California Medical School, A. B. BROWER, University of Southern California Medical School, E. M. BURR, University of Southern California Medical School, R. A. CARTER, University of Southern California Medical School, W. E. COSTOLOW, University of Southern California Medical School, J. H. CRYST, College of Medical Evangelists, L. W. GUISS, University of Southern California Medical School, A. G. HENRICH, College of Medical Evangelists, E. J. JOERGENSON, College of Medical Evangelists, E. G. JONES, University of Southern California Medical School, L. E. KEASBEY, University of Southern California Medical School, I. G. MACDONALD, University of Southern California Medical School, A. H. MILLER, University of Southern California Medical School, S. G. MUDD, C. E. NELSON, College of Medical Evangelists, T. W. NISBET, University of Southern California Medical School, I. Y. OLCH, University of Southern California Medical School, W. H. OLDS, College of Medical Evangelists, S. L. PERZIK, University of Southern California Medical School, H. C. PROUT, College of Medical Evangelists, G. K. SMITH, University of Southern California Medical School, J. J. STEIN, College of Medical Evangelists.

2:35-3:00 p. m. **Dermatology Clinic.**
BEN NEWMAN, Chairman of the Department of Dermatology, Los Angeles County General Hospital.
MAXIMILLIAN E. OBERMAYER, Clinical Professor of Medicine (Dermatology and Syphilology), University of Southern California Medical School.
NELSON PAUL ANDERSON, Clinical Professor of Medicine (Dermatology and Syphilology), University of Southern California Medical School.
MOLLEURUS COUPERUS, Assistant Professor of Dermatology and Syphilology, College of Medical Evangelists.

3:05-3:25 p. m. **Care of Premature Infant: Presentation of Patients and Equipment.**
MILO B. BROOKS, Professor of Pediatrics and ALONZO B. CASS, Assistant Clinical Professor of Pediatrics, College of Medical Evangelists.

3:30-4:00 p. m. **Advancements in the Treatment of Poliomyelitis and Encephalitis.**
ALBERT G. BOWER, Clinical Professor of Medicine, University of Southern California Medical School, and Staff, Communicable Disease Section, Los Angeles County General Hospital.

Friday morning, December 7

9:00-9:30 a. m. **Hemorrhoidectomy.**
MALCOLM R. HILL, Professor of Proctology, College of Medical Evangelists.

9:40-10:10 a. m. **Fistulectomy.**
ROBERT L. BELT, Assistant Clinical Professor of Surgery (Proctology), University of Southern California Medical School.

10:20-10:45 a. m. **Circumcision.**
ROGER W. BARNES, Professor of Urology, College of Medical Evangelists.

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THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located in the Shrine Convention Hall, on the balcony above the Technical Exposition. The area is reached by stairways from the main floor or by elevator in the adjoining Al Malaikah Temple and is adjacent to meeting rooms, motion pictures and television.

Features of the Scientific Exhibit include an exhibit symposium on overweight, nutrition and health, together with a question and answer conference; a special exhibit on fractures; manikin demonstrations on problems of delivery and an exhibit symposium on noise and health. Exhibits have been selected for their interest to the physician in general practice, including groups on internal medicine, surgery, obstetrics, urology, dermatology, physical medicine, radiology pathology, anesthesiology, neurology and psychiatry and other subjects.

The Scientific Exhibit will open Tuesday morning, December 4, and will close at 12:00 noon Friday, December 7. On intervening days, it will be open from 8:30 a. m. to 6:00 p. m. The motion picture program will be shown in an adjacent hall, daily from 9:00 a. m. to 10:45 a. m. and from 1:00 p. m. to 3:45 p. m.

The office of the Committee on Scientific Exhibit will be located in Space 101 on the balcony.

Committee on Scientific Exhibit
E. J. McCORMICK, Chairman
L. W. LARSON
THOMAS P. MURDOCK
GEORGE F. LULL, ex officio
ERNEST B. HOWARD, ex officio
AUSTIN SMITH, ex officio
THOMAS G. HULL, Director

Overweight, Nutrition and Health

The exhibit symposium, with a question and answer conference, is presented with the cooperation of the American Medical Association, American Dietetic Association, Metropolitan Life Insurance Company and the United States Public Health Service.

The sponsoring committee is composed of the following:

LOUIS I. DUBLIN, New York
JAMES S. McLESTER, Birmingham, Ala.
LESTER J. PALMER, Seattle
HOWARD F. ROOT, Boston
STANLEY R. TRUMAN, Oakland, Calif.
RUSSELL M. WILDER, Washington, D. C.
HOWARD F. WEST, Los Angeles, Calif.

The active committee in charge of the program is as follows:

ARNOLD B. KURLANDER, Washington, D. C.
HERBERT H. MARKS, New York
WILLIAM P. SHEPARD, San Francisco
JAMES R. WILSON, Chicago, Chairman

There are five exhibits on the subject of overweight, nutrition and health, with continuous demonstrations throughout the week.

Question and Answer Conference on Overweight, Nutrition and Health

A question and answer conference on overweight, nutrition and health, will be conducted daily—10:00 a. m. to 5:00 p. m.—from Tuesday morning to Friday noon, with program continuing through the noon hour. Competent leaders will discuss different phases of the problem at half-hour intervals, and time will be devoted to questions which are mailed in or which come from the floor.

A motion picture, "Losing to Win," will be shown each morning and afternoon (15 minutes, sound film).

The program follows:

TUESDAY, December 4

10:00 a. m. **Introduction—"Losing to Win"**—a motion picture.
ARNOLD B. KURLANDER, Washington, D. C.

10:30 a. m. **Overweight, Commonest Form of Malnutrition.**
(Speaker to be announced)

11:00 a. m. **Obesity—What About the Endocrines?**
(Speaker to be announced)

12:00 noon **Paradoxes of Basal Metabolism in Obesity.**
FREDERIC T. JUNG, Chicago

12:30 p. m. **Overweight as a Contributing Cause of Diabetes and Its Complication.**
(Speaker to be announced)

1:00 p. m. **Recent Advances in Nutrition.**
AGNES FAYE MORGAN, San Francisco.

1:30 p. m. **"Losing to Win"**—a motion picture.

2:00 p. m. **Food Fads and Fancies.** OLIVER FIELD, Chicago.

2:30 p. m. **Spot Reducing; Weight Reducing Gadgets.**
HOWARD A. CARTER, Chicago.

3:00 p. m. **The Problem of Obesity in General Practice.**
JASON P. SANDERS, Shreveport, La.

3:30 p. m. **Overweight and Cardiovascular Disease.**
ERNEST E. IRONS, Chicago.

4:00 p. m. **Low Sodium Diets.**
WILLIAM L. BENDER, San Francisco.

4:30 p. m. **"Losing to Win"**—a motion picture.

WEDNESDAY, December 5

9:45 a. m. **"Losing to Win"**—a motion picture.

10:00 a. m. **Overweight—A Number One Health Problem.**
(Speaker to be announced)

10:30 a. m. **What Kind of Diet for Weight Reducing?**
RUSSEL V. LEE, Palo Alto, Calif.

11:00 a. m. **How to Prescribe a Diet?**
JAMES J. SHORT, Los Angeles.

11:30 a. m. **Drugs and the Treatment of Obesity. What Drugs Are Safe? When Should They Be Used?**
ROBERT T. STORMONT, Chicago.

12:00 noon **Does Your Patient Need Vitamin Pills?**
(Speaker to be announced)

12:30 p. m. **Diet and the Management of Diabetes.**
(Speaker to be announced)

1:00 p. m. **Teaching Diabetic Patients.**
BENNO K. MILMORE, San Francisco.

1:30 p. m. **"Losing to Win"**—a motion picture.

2:00 p. m. **Who Is Overweight? Old and New Methods of Evaluating.** LESTER BRESLOW, San Francisco.

2:30 p. m. **Is the Calorie Dead?**
HARRY J. DEUEL, Los Angeles.

3:00 p. m. **Handling the Emotional Problems of the Overweight.** S. CHARLES FREED, San Francisco.

3:30 p. m. **Principles of Group Therapy in Obesity.**
LESTER BRESLOW, San Francisco.

4:00 p. m. **Experiences with Group Therapy.**
ARNOLD B. KURLANDER, Washington, D. C.

4:30 p. m. **"Losing to Win"**—a motion picture.

THURSDAY, December 6

9:45 a. m. **"Losing to Win"**—a motion picture.

10:00 a. m. **Application of Nutrition in Medical Practice.**
DWIGHT L. WILBUR, San Francisco.

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10:30 p. m. **Why Do People Eat Too Much?**
DOUGLAS GORDON CAMPBELL, San Francisco.

11:00 a. m. **What About Cholesterol Today?**
JOHN W. GOFMAN, Berkeley, Calif.

11:30 a. m. **Further Comments on Cholesterol.**
GEORGE V. MANN, Boston.

12:00 noon **Overweight and Hypertension.**
HOWARD F. WEST, Los Angeles.

12:30 p. m. **Growth and Overweight in Children.**
PETER COHEN, San Francisco.

1:00 p. m. **Dietotherapy in Gastro-Intestinal Disease.**
GRANT H. LAING, Chicago.

1:30 p. m. **"Losing to Win"**—a motion picture.

2:00 p. m. **The Overweight Executive—Problems and Programs.** E. P. LUONGO, Los Angeles.

2:30 p. m. **Reducing Your Husband—Something Special for the Doctors' Wives.**
IDA JEAN KAIN, Washington, D. C.

3:00 p. m. **Opportunities for Weight Control in Industry.**
WILLIAM P. SHEPARD, San Francisco.

3:30 p. m. **Community Program for the Overweight.**
ARNOLD B. KURLANDER, Washington, D. C.

4:00 p. m. **Food Fads and Fallacies.**
FREDRICK J. STARE, Boston.

4:30 p. m. **"Losing to Win"**—a motion picture.

FRIDAY, December 7

9:45 a. m. **"Losing to Win"**—a motion picture.

10:00 a. m. **Exercise and Obesity.**
RALPH E. DEFOREST, Chicago.

10:30 a. m. **What About the Overweight Child.**
PETER COHEN, San Francisco.

11:00 a. m. **Recent Advances in Nutrition.**
GEORGE V. MANN, Boston.

11:30 a. m. **Protein Therapy.** (Speaker to be announced)

Nutritional Research and Medical Problems

FREDRICK J. STARE, Harvard University School of Public Health, Boston.

The exhibit illustrates three experimental programs carried on by the Department of Nutrition, Harvard School of Public Health: (1) athcrosclerosis, cholesterol and the serum lipoproteins, presenting a summary of the present status of the cholesterol-atherosclerosis relationship; descriptions of the lipoprotein hypothese and ultracentrifuge techniques; (2) parenteral nutrition and intravenous fats describing developments in the preparation of parenteral fat emulsions along with their uses; (3) oral fat emulsions as a caloric supplement; (4) the application of intravenous fat emulsion technique to other medical problems, i. e., an emulsion of the oil vitamin K_1 for intravenous use in dicumarol emergencies, the use of carinogeme emulsion for experimental production of cancer of the breast in the female rat.

Meals for the Low-Calory Diet

AMERICAN DIETETIC ASSOCIATION, Chicago.

This exhibit shows place settings for one day's meals—breakfast, lunch and dinner. Food models are used to represent a low-calory diet. A series of illustrated charts show how a low-calory diet can be changed to suit the needs of a person requiring a low sodium diet and a diabetic diet. The cholesterol content of these meals is discussed.

Overweight as a Contributing Cause of Diabetes and Its Complications

HOWARD F. ROOT, New England Deaconess Hospital, Boston.

Data are shown indicating relation of overweight to onset of diabetes to the factor of heredity and diabetes, to the length of life and the prognosis for diabetic patients and its relation to the incidence of gangrene and amputation of the feet. The emphasis is on preventive aspects.

Weight Control—An Experiment in Group Therapy

ARNOLD B. KURLANDER, MARJORIE GRANT and A. L. CHAPMAN, United States Public Health Service, Washington, D. C.

The exhibit presents a combination sound and sight exhibit of a typical obese group in the process of meeting. A large photo mural of the group will be the central panel of the exhibit. By rear illumination each member is highlighted as he speaks. The sound of the speaker's voice will be heard through individual earphones connected to the panel. Another section of the exhibit will deal with the results of a pilot study of this form of therapy conducted in a Boston Nutrition Clinic.

Influence of Overweight on Health and Disease

DONALD B. ARMSTRONG, LOUIS I. DUBLIN, EARL C. BONNETT and HERBERT H. MARKS, Metropolitan Life Insurance Company, New York.

The exhibit presents facts on mortality and morbidity among overweights based on recent life insurance and clinical experience. The material includes (1) an up-to-date study of the mortality experience of the Metropolitan Life Insurance Company on persons limited to substandard insurance because of overweight; (2) data from mortality studies of impaired lives showing the influence of overweight on prognosis in various conditions; (3) the relative frequency and rate of development of heart disease, hypertension, diabetes, and other conditions in overweights, and (4) the effect of weight reduction in overweights on their health and longevity. The exhibit also presents the main features of the Company's health educational program on overweight, and the educational materials to be used which have been developed in association with the American Medical Association and the United States Public Health Service.

Hay Fever Diagnosis—Interpretation of Skin Reactions to Pollens

OREN C. DURHAM, Abbott Laboratories, North Chicago, Ill.

Pollen skin reactions can be correctly evaluated only when positive reactors can be proved to be abundant in the air at the time of the patient's suffering and in the area where he lives. In this exhibit pertinent pollen data from 370 communities in the United States and southern Canada are presented in graphic form so that a sample case history and typical set of pollen reactions may be analyzed in the light of local conditions of any particular locality. Copies of the national pollen map and statistical data accumulated by the Pollen Survey Committee of the Research Council of the American Academy of Allergy, Abbott Laboratories and state public health departments will be available to all physicians.

Gastroscopic Biopsy—Clinical Findings with Tissue Biopsy of the Stomach

PAUL L. SHALLENBERGER, CHARLES DEWAN, JOHN C. REGANIS and CLAYTON B. WEED, Guthrie Clinic, Robert Packer Hospital, Sayre, Pa.

Photomicrographs of tissue in color enlargements, roentgenograms and color pictures of gross surgical specimens are displayed. Methods of preparation of the patient and examination are shown. Statistical results have been condensed and are charted. Conclusion and summary of our experiences are pointed out.

Five Year Study of Gastroscopy in a Large General Hospital

DAVID NIEMETZ and IRA WILSON, University of Southern California and Los Angeles County General Hospital, Los Angeles.

Pictures are shown of various diseases encountered in gastroscopic examination and descriptive tables correlating age, sex, and race. Comparison of x-ray and gastroscopy in various diseases are included, with indications and contraindications.

Benign Prolapse of Gastric Mucosa: Report on Sixty Cases—A Clinical, Roentgenologic and Gastroscopic Study

JACOB LICHSTEIN and LEONARD ASHER, University of Southern California School of Medicine and Cedars of Lebanon Hospital, Los Angeles.

The exhibit is based on a study of approximately 60 cases of redundancy of mucous membrane of pylorus of stomach with prolapse into duodenum. Clinical manifestations, complications, roentgenographic diagnostic criteria and gastroscopic findings are elucidated. Thirty-seven cases in series were gastroscoped and etiologic hypotheses are presented, together with concepts of therapy, both medical and surgical. Pathologic material and surgical data on seven cases are presented. The incidence of associated gastrointestinal conditions and diseases of other systems are elaborated. Bibliography is included.

Pheochromocytoma

ROBERT J. KOSITCHEK, University of Southern California School of Medicine, Los Angeles.

This exhibit presents the medical and surgical aspects of a proven case of pheochromocytoma. An evaluation of the present existing drugs as diagnostic and therapeutic agents is graphically presented. The value of the transabdominal surgical approach is shown by body models demonstrating where these tumors have been found. The physiology of adrenalin and noradrenalin is compared. The literature is graphically reviewed. A demonstration of the problems that this curable type of hypertension presents to the practice of medicine.

Statistical Study of Laennec's Cirrhosis—Clinical and Pathological Review of 782 Cases from Among 18,000 Autopsies

E. M. HALL, A. Y. OLSON and F. E. DAVIS, University of Southern California School of Medicine and Los Angeles County Hospital, Los Angeles.

The exhibit illustrates the results of a study of 782 cases of Laennec's cirrhosis from among 18,000 autopsies performed at the Los Angeles County Hospital. Clinical data are included covering ages, sex, races, relation to alcoholic consumption, dietary factors, symptoms and signs, and clinical laboratory findings. Relation of cirrhosis to blood pressure, general and coronary arteriosclerosis are important features. Pathological data consists of an analysis of the morphological changes in the liver, classification of various types of cirrhosis and causes of death.

Subtotal Sympathectomy in the Treatment of Arterial Hypertension—Present Day Concepts

THEODORE B. MASSELL and ROBERT ELLENBERG, College of Medical Evangelists and White Memorial Hospital, Los Angeles.

The purpose of the exhibit is to illustrate (1) present day concepts regarding the indications and contraindications for the surgical treatment of hypertension; (2) the evolution of surgical procedures in current use; (3) detailed technique for performing subtotal sympathectomy by an intercostal transpleural approach; (4) summary of the pre- and post-operative care and (5) summary of results.

Cancer of the Thyroid

FREMONT E. DAVIS and CHARLES T. STURGEON, University of Southern California School of Medicine, Los Angeles.

An illustrated classification of thyroid cancer is accompanied by results of a series of patients treated with surgery and later for the recurrences by surgery and radioactive iodine I^{131}. The failure of radioactive iodine to influence metastasis of thyroid carcinoma is presented. A tentative program for the management of cancer of the thyroid is outlined.

The Diagnosis of Thyroid Disease

DONALD W. PETIT and FREDERICK SCHARLES, University of Southern California School of Medicine, Los Angeles.

The exhibit shows a graphic review and summary of modern techniques for the diagnosis of thyroid disease; the use of tracer techniques with radioactive iodine, basal metabolic rate determinations. Blood iodine determinations and clinical evaluation are compared and contrasted. The general thesis of the exhibit will be that these tests all measure certain features of thyroid function but that none of them specifically measure the disease hyper- or hypo-thyroidism.

Thyrotrophic Hormone in the Diagnosis and Treatment of Thyroid Disease

BENJAMIN SIMKIN, University of Southern California School of Medicine, Los Angeles.

The exhibit includes (1) a summary of anatomical and physiological changes in the thyroid gland induced by injections of thyroid stimulating hormone (TSH), the chronological order in which these changes occur after TSH administration is indicated; (2) a presentation of a modification of the Stasis Tadpole Method for the bio-assay of TSH; (3) a summary of serum TSH assay findings in patients with normal and abnormal thyroid function, and the diagnostic significance of these findings; (4) a summary of the diagnostic and therapeutic use of TSH in patients; (*a*) in the differential diagnosis of hypothyroidism; (*b*) in the evaluation of thyroid function in patients receiving thyroid extract therapy; and (*c*) in the diagnosis and treatment of metastatic cancer of the thyroid gland; (5) a suggested protocol for the precise diagnosis of patients suspected of being hypothyroid.

Clinical, Pathological and Physiological Experience with Anti-Thyroid Drugs

BORIS CATZ, University of Southern California School of Medicine, Los Angeles.

This exhibit illustrates the differences in physiological, clinical and pathological response obtained with various anti-thyroid drugs (namely, Iodo-Thiouracil, Thiouracil plus KI and Tapazole). The physiological studies were made with radioactive iodine, serum protein bound iodine, thyroid iodine content, serum cholesterol and basal metabolic rate. An objective analysis of pathological findings was obtained by microhistometric determination of the mean acinar cell height of the thyroid gland. Charts, drawings, posters, photomicrographs and direct microscopic examination of slides show the findings.

The Use of ACTH and Cortisone in Medical and Surgical Emergencies

LENORE BOLING, JOHN W. PARTRIDGE, PAUL SCHNEIDER and LAURENCE W. KINSELL, Institute for Metabolic Research, Highland Alameda County Hospital, Oakland, Calif.

Adrenal steroids such as cortisone, which result from the administration of adrenocorticotropic hormone (ACTH), impose a blockade between multiple toxins and multiple body cells.

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Consequently, the administration of ACTH and cortisone to patients with overwhelming infectious states, and to patients with toxemias of other etiology, may result in a significant reduction in morbidity and in mortality. When used in the management of patients with actual or potentially infectious conditions, adequate chemotherapy must always be co-administered. The above concepts are presented in diagrammatic fashion.

Oral Use of Procaine in Gastro-Intestinal Disease—Correlation of Gastric Function Studies

DONALD C. BALFOUR JR., HOWARD SKYPECK and GEORGE K. WHARTON, University of Southern California School of Medicine, Los Angeles.

The exhibit includes a description of the methods of administration of procaine hydrochloride with examples of the solutions used. There are charts of the studies done on gastric function during the administration of procaine. X-rays showing the relaxation of cardiospasm and pyloraspasm following the use of oral procaine are shown.

Cortisone—Examples from Its Therapeutic Spectrum

AUGUSTUS GIBSON, CHARLES E. LYGHT, STEPHEN FROMER and LYON P. STREAN, Merck and Co., Inc., Rahway, N. J.

A series of illustrated panels present up to date clinical data on the results obtained with cortisone therapy in several important medical, surgical and experimental conditions; certain undesirable hormonal effects and their avoidance are shown, together with newer regimens of dosage.

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Oral Penicillin and Sulfonamides in the Prophylaxis of Rheumatic Fever

ELLA ROBERTS, Children's Heart Hospital, Philadelphia.

Sulfonamides have been given to 406 children convalescing from rheumatic episodes. Patients have been followed with daily observations for periods ranging from three months to two years. The incidence of rheumatic occurrence is noted, and comparisons are made with an untreated control series. There were two recurrences (0.5 per cent) in the series treated with sulfonamides and a recurrence rate of 20 per cent of the control series. Oral penicillin has been given to 60 children convalescing from rheumatic episodes. Patients have been followed with daily observations for periods ranging from three months to eighteen months. There were zero recurrences in the series treated with penicillin. Facts of dosage, type of drug and toxicity are considered.

Benemid—Its Influence on PAS, Penicillin and Other Antibiotics

WILLIAM P. BOGER, WALTER V. MATTEUCCI, NELSON H. SCHIMMEL and HARRISON F. FLIPPIN, Philadelphia General Hospital, Philadelphia.

The new drug Benemid p-(di-n-propylsulfamyl)-benzoic acid, in a small oral dose of 2 grams, is capable of enhancing by 2 to 10 times plasma concentrations of penicillin regardless of the route of administration of the antibiotic. In addition, Benemid increases the plasma concentrations of PAS, a drug widely used in the treatment of tuberculosis, by 20 to 30 per cent. Benemid is of value in the treatment of chronic gout by reason of its ability to lower serum uric acid levels to normal and maintain them there for an indefinite period of time. The drug has been administered for as long as a year without evidence of toxicity. Pharmacologic studies are presented to support the above statements. The influence of Benemid on the renal clearance of penicillin, phenolsulphonthalein (PSP) and para-aminohippurate (PAH), have been studied. Evidence is presented to show the non-effect of Benemid on plasma concentrations of aureomycin, chloramphenicol, terramycin, neomycin and streptomycin.

Role of Lipotropic Agents in Liver Disease—A Study of Phospholipide Synethesis Using Radiophosphorus

DAVID CAYER and W. E. CORNATZER, Bowman Gray School of Medicine, Winston-Salem, N. C.

The exhibit consists of a general presentation of current concepts in the experimental production of cirrhosis and the role of lipotropic factors, choline and methionine, in the management of various forms of liver disease in human patients. The histologic appearance of the liver as determined by needle biopsy has been correlated with the rate of phospholipide turnover determined with the radioactive isotope P^{32} in normal persons, and patients with infectious hepatitis and cirrhosis, and conclusions on the general concepts of fat transport and the use of lipotropic factors in therapy are made.

Intracardiac Surgery of Acquired and Congenital Heart Disease

ROBERT P. GLOVER and THOMAS J. E. O'NEILL, Hahnemann Medical College and Hospital, Episcopal Hospital and St. Christopher's Hospital for Children, Philadelphia.

The development of intracardiac surgery of both acquired (valvular and coronary) and congenital (valvular, septal defects, vascular abnormalities) lesions of the heart is depicted. Pathologic, physiologic and anatomic considerations are shown in detail by chart, artistry and photography. The surgical techniques as developed by the authors and others are completely portrayed in so far as this work has progressed. Both experimental and clinical techniques are included. Where the series of clinical cases has been sufficiently large to warrant analysis, the results, both immediate and long term, are tabulated. Actual and proposed surgical techniques are illustrated by photographic and diagrammatic transparencies.

Correlative Study of Cardiac Diseases

IRVING TREIGER, Beverly Hills, Calif.

Translite films for correlative study of roentgenograms, electrocardiograms and pathologic specimens in frequently encountered heart conditions are shown to emphasize the correlative clinical value of various methods of examination in diagnosis and treatment of cardiovascular diseases.

Serum Fat Globules in Atherosclerosis—Dark-Field Microscopy to Determine the Emulsifying Properties of Serum

WILLARD J. ZINN, GEORGE C. GRIFFITH and BARBARA SINGER, University of Southern California School of Medicine, Los Angeles.

The exhibit shows the history, the technique, and the results of investigation of the variations in the colloidal state of arterial capillary serum lipids by dark-field microscopy. The importance of the ratio of non-emulsified to total visible fat particles as a diagnostic tool is emphasized. The correlation between decreased emulsifying power of serum and atherosclerosis will be demonstrated and certain other disease states associated with decreased emulsification of serum fats will be mentioned. The dark-field microscope will be used to demonstrate samples of sera.

American Medical Education Foundation

RUSSELL F. STAUDACHER, American Medical Education Foundation, Chicago.

The exhibit shows the aims and purposes of the Foundation, together with the progress that has been made. The question "What is Wrong with Medical Education" is presented for discussion.

Animal Tuberculosis—Still a Menace to Human Health

J. S. Bengston, E. A. Benbrook, R. J. Cyrog, W. H. Feldman, J. V. Lacroix and C. D. Van Houweling, American Veterinary Medical Association, Chicago.

The host specificity for the avian, bovine, and human type of tubercle organisms is shown. Photographs and photomicrographs show the gross and microscopic lesions in the various hosts. Charts and graphs illustrate the organization and techniques of the bovine tuberculosis eradication program and the progress that has been made. A chart also shows the human tuberculosis death rate since 1900.

The Tubercle Bacillus and Other Acid Fast Bacilli-Phase Microscope and Electron Microscope Studies

Drake W. Will and Emil Bogen, University of California at Los Angeles, Los Angeles and Olive View Sanatorium, Olive View, Calif.

Human, bovine and avian tubercle bacilli, virulent and avirulent strains, Johne's bacillus, acid fast bacilli isolated from cases of leprosy and from various cold blooded animals, from smegma, and free living forms or saprophytes of many different origins were all grown on a variety of liquid and solid media and examined with conventional microscopic techniques and also by phase and electron microscopy. Photographs, tables, and actual specimens elucidate the colonial and individual morphological characteristics of the different types of acid fast bacilli and indicate the chief points for differentiating them.

Fine Structure in Glomerular Capillaries—Electron Micrographs of Thin Sections of Kidney

R. F. Baker and F. W. S. Modern, University of Southern California School of Medicine, Los Angeles, and Veterans Administration Hospital, Long Beach, Calif.

The exhibit consists of a set of electron micrographs which show fine structure in the normal kidney glomerulus. Preparation of the tissue involves a quick freeze in liquid nitrogen, the use of a freezing microtome and fixation in osmic acid. Sections 0.05 micron thick are cut on a modified spencer microtome and mounted on 200 mesh screen for the electron microscope.

Why Do a Liver Biopsy?

Victor M. Sborov and Colonel Joseph M. Blumberg, MC, Army Medical Service Graduate School and Walter Reed Army Hospital, Washington, D. C.

The exhibit analyzes the practical indications for a biopsy of the liver. The indications are emphasized by examples of specific clinical conditions where biopsy of the liver has served as a useful aid in the diagnosis and in establishing the prognosis of various clinical conditions. The pathology found in these is correlated with clinical history, laboratory data and follow-up; in addition, the technique of liver biopsy is demonstrated as well as its contraindications and complications.

Malignant Melanoma of the Choroid and Ciliary Body

Helenor Campbell Wilder, Armed Forces Institute of Pathology, Washington, D. C.

The exhibit is based on a study of over 2500 cases of malignant melanoma of the choroid and ciliary body, 1064 of which have been followed for five years or longer.

Malignant Neoplasms in Childhood

Wilbur Clyde Thomas, Children's Hospital, Los Angeles.

Pertinent clinical and pathological material with reference to cancer of the pediatric age group is summarized using color transparencies, x-rays, drawings and specimens. Emphasis is placed on tumors most frequently encountered. Differential diagnoses frequently of importance in the clinical handling of the patient are covered, as perceived in a review of cases in the laboratory.

Advances in the Laboratory Diagnosis of Infectious Diseases

Charles M. Carpenter, Ruth A. Boak and Eric L. Nelson, University of California School of Medicine, Los Angeles.

Photographs, posters, and specimens show several new methods for the laboratory diagnosis of certain infectious diseases: (1) immobilization test for syphilis; (2) the coxsackie viruses, their detection and clinical significance, and (3) blood cultures employing sediment from hemolyzed red cells.

Hematemesis and Melena

Harold Lincoln Thompson, Joseph M. Oyster, John D. Heid, Frank M. Morgan, and Devere W. Mcguffin, Los Angeles County General Hospital, Los Angeles.

The exhibit presents a study of 295 cases in which hematemesis and melena were the prominent clinical symptoms. The pathologic findings are correlated with the clinical symptoms. The results of treatment and mortality are included.

The Psychoneuroses

George N. Thompson, Brunon Bielinski and Oletha Fowler, University of Southern California School of Medicine, Los Angeles, Calif.

This exhibit illustrates basic information concerning the psychoneuroses and is designed primarily for the general practitioner. Psychoneuroses are well defined clinical entities. They should not be diagnosed by negative evidence or by exclusion. The precise causes of all the psychoneuroses are unknown. Psychoneuroses may overlap but are usually clear cut and are of a certain number. Much misinformation concerning them exists and this exhibit attempts to demonstrate known facts and to eliminate hypothetical material. All physicians should treat some of these disorders. General principles of treatment are stated.

A Glimpse into the History of Injury to the Skull and Brain

Cyril B. Courville, Institute of Nervous Diseases, Los Angeles.

The purpose of this exhibit is to present in pictorial and physical form the factors involved in the production of injuries to the skull and brain in past ages. It is also possible to see the effects of such injuries in the paintings and monuments of civilizations of the past. But most of all the mute but impressive evidence of the cranial wounds themselves are most interesting and instructive. This exhibit is but a sampling of the material being collected on the history of craniocerebral injuries throughout past ages for the Museum of the Institute of Nervous Diseases.

Cerebral Angiography as an Addition in the Diagnosis in Neurology and Neurosurgery

Edison D. Fisher and Guy M. Hunt, Institute of Nervous Diseases, College of Medical Evangelists, Los Angeles.

The exhibit consists of roentgenograms illustrating the normal vascular pattern of the cerebral circulation and deviations from normal as seen in vascular anomalies and intracranial space-taking lesions.

Surgical Lesions of the Brain

Philip J. Vogel, Institute of Nervous Diseases, Los Angeles.

Specimens of organic diseases of the brain are mounted in plastic. This exhibit is designed to show some of the more common surgical lesions of the brain. In addition selected photographs of similar specimens are shown.

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Focal Cerebral Lesions—Their Symptoms

J. M. NIELSEN and LLOYD MATLOVSKY, University of Southern California School of Medicine, Los Angeles.

Transparencies, photographs, pathological specimens and legends describe the clinical manifestations of the lesions.

Special Exhibit on Fractures

The Special Exhibit on Fractures is presented under the auspices of the following committee:

KELLOGG SPEED, Chicago, Chairman.
FREDERICK A. JOSTES, St. Louis.
GORDON M. MORRISON, Boston.

Elementary points in the treatment of each type of fracture will be stressed, with particular emphasis on the interest of the physician in general practice.

Continuous demonstrations will be conducted throughout the week on the following subjects:

Compression Fracture of the Spine
Fracture of the Radius—Lower End
Fractures of the Ankle

A pamphlet giving the essential features of the exhibit has been prepared for distribution.

The following demonstrators will assist the Committee in the presentation of the exhibit:

John R. Black, Los Angeles.
Ralph G. Carothers, Cincinnati.
F. Walter Carruthers, Little Rock, Ark.
Lewis N. Cozen, Los Angeles.
Robert W. Florence, Tacoma, Wash.
Alfred E. Gallant, Los Angeles.
Paul H. Harmon, Hollywood, Calif.
George W. Hawkins, Santa Ana, Calif.
Jackson K. Holloway, Seattle.
Frederic W. Ilfeld, Los Angeles.
James R. Lincoln, Wareham, Mass.
J. Vernon Luck, Los Angeles.
Robert Mazet Jr., Los Angeles.
John F. Merritt, Santa Barbara, Calif.
William R. Molony Jr., Los Angeles.
Alonzo J. Neufeld, Los Angeles.
E. Payne Palmer, Phoenix, Ariz.
Ralph C. Petersen, Glendale, Calif.
Homer C. Pheasant, Los Angeles.
William R. Rhorer, Long Beach, Calif.
Albert H. Rodi, Los Angeles.
Edmund T. Rumble, Callicoon, N. Y.
Philip H. Stephens, Los Angeles.
Packard Thurber Jr., Los Angeles.
Herbert W. Virgin Jr., Miami, Fla.

The Segmental Bronchi and Bronchopulmonary Segments

CHEVALIER L. JACKSON, CHARLES M. NORRIS and JOHN F. HUBER, Temple University School of Medicine, Philadelphia.

Special anatomic preparations demonstrate the structure, function and clinical significance of segmental bronchi and corresponding bronchopulmonary segments. The most common variations are presented. The more important sub-segmental bronchi and related sub-segments are described. Systems of nomenclature in general use will be compared.

Mechanical Quackery

OLIVER FIELD, Bureau of Investigation, American Medical Association, Chicago.

A new presentation of fake medical gadgets of various descriptions, some of which are suitable for audience participation. Others are described in the exhibit by appropriate data in legend form. Radioactive material for self-treatment is demonstrated by use of a Geiger counter.

Evaluating the Physical Disabilities of the Cerebral Palsied

F. A. HELLEBRANDT and SARA JANE HOUTZ, Baruch Center of Physical Medicine and Rehabilitation, Medical College of Virginia, Richmond, Va.

The purpose of the exhibit is to demonstrate the application of physiological techniques for the evaluation of neuromuscular disabilities with particular emphasis on cerebral palsy. These include: (1) chronophotography for the analysis of the influence of athetosis and its effect on stance and locomotion; (2) objective muscle testing in its relation to muscle balance, static and dynamic power; (3) clinical applications of ergometry and ergography; (4) the center of gravity platform for the physiological study of postural alignment, stance stability, and the influence of the stabilizer.

Artificial Respiration—Efficiency of Various Methods

ARCHER S. GORDON, MAX S. SADOVE, FRANK RAYMON, and A. C. IVY, University of Illinois College of Medicine, Chicago.

The exhibit consists of three parts: (1) A pictorial history of various methods of manual artificial respiration lays the background for current studies; (2) twenty-four wooden manikins are arranged in the inspiratory and expiratory positions of the six commonly used and newer, more efficient methods of resuscitation. Pneumograms depict the ventilatory pattern and volume with each of the methods; (3) charts and tables indicate the (a) ventilatory effects, (b) circulatory effects, and (c) fatigue of operator with studies of the various methods on warm, nonrigid corpses, volunteers with passive suspension of respiration, and totally apneic, curarized-anaesthetized normal male adults. A demonstration of the various manual techniques on a living model will be given.

Nationwide Services for the Crippled

LAWRENCE J. LINCK and JAYNE SHOVER, National Society for Crippled Children and Adults, Chicago.

The exhibit shows the services and facilities available to physicians in the care and treatment of crippled persons, through the Easter Seal Society and its 2,000 state and local units. Speech presentations through synchronized recordings and slides will be featured.

Postural Backache

JAMES R. GARNER, Posture Research Institute, Atlanta, Ga.

Panels depict postural states that are responsible for development of backaches (non-pathologic) and the mechanisms that enter into this common malady. The subject covers standing, sitting and sleeping (lying) postures.

Physical Therapists—Their Job and Their Distribution

MILDRED ELSON, American Physical Therapy Association, New York.

Physical therapists are in short supply throughout the country. It is recognized, however, that there are a larger number of therapists in the heavier populated states. A large map of the United States, with 1950 census figures, together with the number of physical therapists in each state and the proportion of therapists to the population will be displayed. For example, New York has 551 physical therapists, or one to every 27,000; New Hampshire has 25, or one to over 20,500; Mississippi has 12, or one to every 181,600. Illustrative examples of the job of the physical therapist which are reproduced from a new brochure entitled "The Job of the Physical Therapists," prepared for vocational counsellors, employing agencies and physicians.

Polyps of the Rectum and Recto-Sigmoid

DAVID MILLER, College of Medical Evangelists, Los Angeles.

The exhibit consists of colored transparencies of various polyps as seen through the sigmoidoscope and colored photomicrographs of these polyps, shown by means of a viewing box.

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There are also colored illustrations and titles showing the method of insertion of a sigmoidoscope, method of taking a biopsy through the sigmoidoscope and methods of removal and destruction of polyps through the sigmoidoscope. These illustrations demonstrate the office management of the above procedures.

Anorectal Divulsion Versus Pectenotomy

MANUEL G. SPIESMAN and LOUIS MALOW, Mount Sinai Hospital and Chicago Medical School, Chicago.

Anal tightness called "pectenosis," always present in fissure-in-ano and other anal conditions, has been proven microscopically to be due to a pathological fibrous connective tissue band which forms around the anal canal as a result of chronic infection and passive congestion. Unless this band is surgically incised, anal fissure operations are usually not lasting. Anorectal divulsion, as commonly practiced, is traumatic, tearing the fibers of the band and causing a thicker band to form with resulting recurring fissures. The operation to relieve this condition is called "pectenotomy" and was first described by Miles and Abel of London. This operation is recommended as a substitute for the unsurgical, traumatic and unnecessary procedure of divulsion. Stereoscopic viewers will demonstrate, in three dimensions, the stages of the operation. Microscopic slides will be shown to substantiate the pathological presence of pecten bands.

Microradiography

WALLACE S. TIRMAN, HARRY W. BANKER and CHARLES H. CAYLOR, Caylor-Nickel Clinic, Bluffton, Ind.

The exhibit consists of microradiographs of the microscopic vascular supply of several rabbit organs. The x-rays of the minute circulation of the organs were made by means of a diffraction x-ray tube using 20 K. V., 4 M. A. with exposure time varying up to 3 hours. The organs were injected in the live rabbit using colloidal silver iodide as a contrast substance. Enlargements up to 300 X will be shown. A new method of microradiography is also presented. An ordinary diagnostic x-ray machine was used to make these microradiographs using 30 to 70 K. V., 200 M. A., with exposure times varying from 4 to 40 seconds. A description of both procedures is outlined.

Atomic Medicine in General Practice—Radioactive Iodine and Radioactive Phosphorus for Diagnosis and Treatment

HENRY L. JAFFE, Cedars of Lebanon Hospital, and University of Southern California School of Medicine, Los Angeles.

The exhibit shows how radioactive iodine is used in tracer doses for the diagnosis of thyroid disease and for the diagnosis of brain tumors (diiodofluorescein). The use of radioactive iodine for the treatment of thyrotoxicosis, certain types of thyroid cancer, and for advanced heart disease is demonstrated as well as how radioautographs of thyroid tissue are made to determine whether thyroid cancer takes up this substance. The use of radioactive phosphorus in the treatment of certain types of leukemia and polycythemia vera is shown, also the use of radioactive phosphorus in an ointment for the treatment of chronic ulcers of the extremities, as well as radiation ulcers, is demonstrated. The colloidal phosphate of radioactive phosphorus is employed in the treatment of certain advanced types of cancer of the peritoneal cavity where it is successful in cutting down the rapidity of the reformation of ascitic fluid, also for metastatic carcinoma to the pleura, where it helps in cutting down the reformation of pleural fluid.

Liver and Spleen Visualization by a Simple Roentgen Contrast Method—(*a*) the low lateral position of many normal spleens, (*b*) the unreliability of clinical palpation.

SAMUEL ZELMAN, Winter Veterans Administration Hospital, Topeka, Kan.

The technique of a simple, safe and widely applicable, gas contrast method of roentgen visualization of the liver and spleen is described and pictured. Photographic reproductions of roentgen films show normal cases, horizontal and lateral types of spleen positions, enlarged livers and spleens, a serial case study, and cases of special interest. The unreliability of clinical palpation in determining liver and spleen enlargements is demonstrated.

Some Newer Techniques of Eye Surgery

EVERETT R. VEIRS and E. D. MCKAY, Scott and White Memorial Hospitals, Temple, Texas.

The exhibit is in two parts. The first demonstrates the suction method of cataract extraction using a new type of instrument and the exhibitors' method of suturing. The second part illustrates the reconstruction of stenosed lacrimal and nasolacrimal ducts, using special thin wall needles to insert plastic rods and tubes. The method of treatment of nasolacrimal duct stenosis (dacryocystitis) by use of plastic tubing, thereby avoiding operation, is also shown. Moulages and drawings are used to illustrate the technique.

Staging of Lip, Laryngeal and Lingual Cancer—Criteria for Clinical Classification

J. SAMUEL BINKLEY, Los Angeles Tumor Institute, Los Angeles.

Much of the confusion regarding reports of treatment methods arises from failure to describe or define the clinical stage of the disease. Terms such as early, moderately advanced, and advanced disease, unless defined, are vague generalities and have little meaning. By adhering to definite clinical criteria in staging the disease or, at least, by defining one's criteria in reporting results, the reader gains insight to the clinical extent or stage of the disease in question, in a given report. Criteria for staging cancer of the lip, larynx and tongue are illustrated by charts and anatomic drawings. Five year results from treatment are shown, correlating the results by clinical stage.

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Noise and Health

The Council on Physical Medicine and Rehabilitation and the Council on Industrial Health of the American Medical Association, the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology, the Acoustical Society of America and the Acoustical Materials Association have arranged a group of exhibits on noise and its effects on health. Information on the control of noise in physicians' offices, hospitals, operating rooms and industrial plants is presented by means of demonstrational equipment, charts, graphs, samples of sound absorbing materials for the control of noise, measuring instruments such as audiometers and biological specimens.

Measurement of Sound Level

Demonstrations are given at frequent intervals on how to measure sound level and on the characteristics of sounds which are encountered in ordinary medical practice.

Audiometry and Ear Protection

Audimeters and hearing measuring equipment and specimens of devices for protection of the ear to unwanted noises will be shown and demonstrated. Instructions will be given on the taking of an audiogram and consultation on the interpretation of audiograms will be available.

Physiology of the Human Ear

A specimen of a human ear and a large model of human ear are used in connection with other material to illustrate current theories of the hearing processes in man.

Job Placement and Rehabilitation

Charts and descriptive literature deal with the problems and readjustment of hard of hearing handicapped individuals. Ways and means of rehabilitation of the hard of hearing are discussed.

Control of Sound and Noise

Charts, pictures and specimens show how sound absorbing materials control noise in offices, hospitals, operating rooms and industrial plants.

At regular intervals there will be short demonstrations by experts in the specialized field. The following demonstrators will participate:

G. L. Bostwick, Los Angeles
Howard A. Carter, Chicago
G. H. Collin, Los Angeles
Robert S. Cook, Los Angeles
Edward H. Crane Jr., Inglewood, Calif.
Ralph E. DeForest, Chicago
Nephi Eatwyler, Los Angeles
M. E. Farmer, Los Angeles
Aram Glorig, Washington, D. C.
Howard P. House, Los Angeles
Raymond Hussey, Chicago
Norman Jesberg, Los Angeles
Frederic T. Jung, Chicago
C. L. Lloyd, Los Angeles
O. W. McClave, Los Angeles
J. M. Messina, Los Angeles
Francis Morris, Whittier, Calif.
G. H. Morris, Los Angeles
Sydney S. Norwick, San Francisco
Carl M. Peterson, Chicago
Leo V. Turgeon Jr., Los Angeles
Robert L. Watson Jr., Los Angeles
Douglas E. Wheeler, Los Angeles
George C. Wilson, Los Angeles

Curare Antidotes—The Anticurare Action of Some Neostigmine Derivatives

LLOYD D. SEAGER and EDWIN L. RUSHIA, University of Arkansas School of Medicine, Little Rock, Ark.

Charts, tables, graphs and photographs show the chemistry, pharmacologic actions and uses of curare. Results of experiments on normal human subjects and patients demonstrate a marked anticurare action of two new derivatives of neostigmine.

Continuous Peridural and Caudal Block in Obstetrics

JOHN G. P. CLELAND, Oregon City Hospital, Oregon City, Ore.

Anatomical basis for regional block in obstetrics is shown on skeleton (with plastic skin) with sensory and motor pathways and their relation to spinal nerve-roots, sympathetic chain, and uterus, brought out by internal black light fluorescent lighting. A method of continuous localized sensory block is demonstrated. Charts show research establishing sensory and motor pathways and clinical results of 500 cases.

Problems of Delivery—Manikin Demonstrations

Demonstrations will be conducted on problems of delivery in an area adjoining the exhibits on obstetrics. A group of outstanding obstetricians will conduct the demonstrations, using an obstetrical manikin, on a definite schedule throughout the week. There will be an opportunity for questions. Each day's program will appear in the *Daily Bulletin*.

Bernard J. Hanley, Los Angeles, is in charge of the demonstrations, and is assisted by the following physicians from Los Angeles and vicinity:

James I. Buell
George R. Baba
Seymour Benson
Richard N. Clark
John S. Haigh
James V. McNulty
A. J. Murrieta Jr.
Ervin E. Nichols
William R. Schumann
Einer I. Sorenson
Mary M. Wade

Babies Need Blood—Management of Cord and Placental Blood and Its Effect on the Newborn

A. M. MCCAUSLAND, FRANCES HOLMES and WILLIAM R. SCHUMANN, University of Southern California School of Medicine and the Hospital of the Good Samaritan, Los Angeles.

The exhibit depicts the anatomy, physiology and pathology of the fetal circulation. This is the fetal circulation of the baby cord and placenta. Charts show venus pressure studies and illustrate how the baby obtains blood normally if the cord is not cut together with the technique of stripping blood into the baby. A comparative study was made of erythrocyte counts and weights of the newborn at term. Three groups were used: cases in which the cord was clamped at once, those in which the cord was allowed to pulsate five minutes, and those in which the cord and placental blood was stripped into the baby. Standards and procedure were set up so that there would be a minimum of error.

Destructive Operations

FREDERICK H. FALLS and CHARLOTTE S. HOLT, University of Illinois College of Medicine and Illinois Department of Public Health, Chicago.

Sculptures, half-tones and color illustrations, graphs and charts depict complications of labor which lead to the necessity for destructive operations and the instruments and the procedures necessary for their successful accomplishment.

Care of the Premature Infant

ELISABETH LARSSON, MILO B. BROOKS and ROBERT F. CHINNOCK, College of Medical Evangelists, Los Angeles.

The care of the mother during labor and the management of the delivery of the prematurely born infant are presented. The immediate and nursery care of the infant are discussed. Measures which have been useful in decreasing the mortality rate are included.

Practical Gynecology

WALTER J. REICH, MITCHELL J. NECHTOW and ANGELA BARTENBACH, Cook County Hospital, Cook County Graduate School and Chicago Medical School, Chicago.

Practical procedures in gynecology are presented, such as cytology in diagnosis of early carcinoma, the indications and the use of folding plastic pessaries and juvenile vaginoscopy. The diagnosis and treatment of trichomonas vaginitis are shown, as well as the endometrial biopsy, Huhner test, biopsy for intractable pruritus vulvae and the use of a simple intrapelvic hydrotherapy apparatus for pelvic inflammatory disease.

The Use of Intubated Salpingostomy in Tubo-Plasty

MARIO A. CASTALLO and AMOS S. WAINER, Jefferson Medical College and Hospital, Philadelphia.

Photographs and drawings showing work to ascertain whether or not fallopian tubes would bridge over a segment which has been removed surgically, both anatomically and histologically. The experiments were carried out by using female monkeys, rabbits and dogs from which two to three centimeters of the fallopian tube had been removed. Various materials were placed in the gap to note the degree of bridging, among which were whalebone, stainless steel wire and polyethylene tubing. The polyethylene tubing proved to be the most efficacious as a gaping material for the tube recanalized itself both anatomically and histologically.

Vertebral Body Biopsy

ROBERT MAZET JR. and LEWIS N. COZEN, Wadsworth General Hospital and Veterans Administration Center, Los Angeles

The exhibit shows various x-ray films and microscopic sections which have been performed by needle biopsy of the spine.

The Effect of Hormonal Imbalance on Advanced Mammary Carcinoma

JULIAN B. HERRMANN, The Montefiore Hospital, New York.

The indications and contraindications for the various methods employed (castration, pituitary irradiation, administration of estrogens, and androgens) in men and women with advanced mammary carcinoma are illustrated by charts. Each method is exemplified by a case history and roentgenograms to demonstrate recalcification of osteolytic lesions or regression of pulmonary lesions. There are photographs which depict regression of soft tissue lesions. Toxic hypercalcemia, hypopotassemia and other undesirable effects subsequent to hormonal therapy are described and illustrated by curves and photographs.

Aspiration Drainage in Surgery

RAFE C. CHAFFIN, Los Angeles.

Moulages, charts, drawings, photographs and demonstrations show technique in the several fields of the surgical patient. Aspiration drainage is compared with non-drainage (wicks and vents). Statistics show no relation between drainage and wicks.

Leg Pains—A Different Cause and Treatment

LAURENCE JONES, Cedars of Lebanon Hospital, Los Angeles.

Leg pains of varied types are a major problem, in that many are highly refractory to treatment. One particular common type of foot imbalance—internal rotation of the foot on the ankle—produces elongating neurovascular tensions. Anatomical cross-sections through serial levels of the foot and ankle demonstrate a focal pressure point beneath the sustentacular shelf of the calcaneus (heel bone). A fixed and different type of postural foot correction reverses distortion, releases angular pressure, and brings substantial relief to a large number of properly selected cases.

Advances in Peripheral Vascular Surgery

ALBERT FIELDS and W. A. SELLE, University of California at Los Angeles, Los Angeles.

The exhibit includes outlines of historical highlights in peripheral vascular surgery; special attention to varicose veins and peripheral arterial insufficiency; photographs and brief biographical sketches of major contributors and descriptions of diagnostic techniques and operative procedures with particular reference to current concepts and treatments.

Is That Blood Necessary?

JOHN EAGAN, DESIDERIO ROMAN, GEORGE J. HUMMER and JOHN J. SHEEHY, St. John's Hospital, Santa Monica, Calif.

The purpose of this exhibit is to call attention to various hazards associated with the use of blood transfusions. In the exhibit will be seen the types of reactions and complications which are commonly encountered, indications for use of whole blood in general terms, the treatment of hemolytic reactions, precautions in administrating blood.

The Technique of Total Thyroidectomy—Anatomical Considerations and An Evaluation of the Procedure

A. C. SCOTT JR., PAUL M. RAMEY and J. F. MCKENNEY JR., Scott and White Clinic, Temple, Texas.

The purpose of the exhibit is to demonstrate the technique of total thyroidectomy, particularly as related to the anatomical and physiological considerations. The demonstration and protection of the recurrent laryngeal nerves and the parathyroid glands are stressed. Statistical data obtained from our experience with total thyroidectomy are included. Moulages demonstrate the operative technique. Enlarged models are used to illustrate the position, size, shape and color of the parathyroid glands and the anatomical relations of the recurrent laryngeal nerves.

Primary Inguinal Hernioplasty (Operative and Postoperative Review)

LOUIS T. PALUMBO and RICHARD E. PAUL, Veterans Administration Hospital, Des Moines, Iowa.

The exhibit evaluates the results of primary inguinal hernioplasty in 564 unselected male patients upon whom 642 operations were performed. Eighty-five per cent of the patients were followed one to four years. Technique of the procedure utilized is shown by transparencies with descriptive subtitles. The exhibit sets forth the main features of age, incidence, types of hernia, type of suture material, number of operators, complications, associated operations, and recurrence rate. The recurrence rate was 1.4 per cent based upon the number of patients followed and 1.29 per cent based on the number of operations followed. The effects of early ambulation upon the recurrence and complication rates are vividly depicted.

Carcinoma of the Prostate

R. H. FLOCKS, DAVID CULP, FRANCIS RICHARDSON, H. D. KERR and H. B. ELKINS, State University of Iowa College of Medicine, Iowa City, Iowa.

A series of charts and colored photographs illustrate clinical aspects and researches into the treatment of carcinoma of the prostate. These are based on clinical and laboratory studies on a series of 854 cases. Newer developments in interstitial irradiation of carcinoma of the prostate are described and preliminary results discussed.

Reabsorptive Acidosis Following Ureterosigmoidostomy

MILTON L. ROSENBERG, Stanford University Hospital, San Francisco.

This syndrome occurs in 80 per cent of cases (Ferris and Odel). The exhibit consists of diagrams and charts demonstrating the mechanism actually and theoretically involved in the production of hyperchloremia, the symptomatology and the management of the various phases of the syndrome. Patients are often sent to distant medical centers for surgery of this magnitude (cystectomy and ureterosigmoidostomy). Since the syndrome usually develops after the patient has left the hospital and returned home, the general practitioner will be called upon to recognize and treat this condition. The syndrome of reabsorptive acidosis following ureterosigmoidostomy is described.

Cystinuria

HANS H. ZINSSER, University of Southern California School of Medicine, Los Angeles.

Charts show comparative incidence of cystinuria without stone formation, mechanism of stone formation, common fallacies in treatment, and successful results of newer methods.

Clinical Use of Urecholine in Hypotonic Dysfunctions of the Bladder

EDWIN DAVIS, LEROY W. LEE and EDWIN DAVIS JR., University of Nebraska College of Medicine, Omaha, Nebraska.

The exhibit describes the uses of urecholine in various hypotonic dysfunctions of the bladder. A report on clinical experimental observations is presented.

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Systemic Lupus Erythematosus—Observations on Treatment and Hematologic Abnormalities

EDMUND L. DUBOIS and ROBERT R. COMMONS, University of Southern California School of Medicine, Los Angeles.

Observations have been made on 64 cases of disseminated lupus erythematosus (L. E.), 34 controls and 30 treated with ACTH, cortisone and testosterone. Life expectancy and clinical courses are compared with both groups. Many manifestations of L. E. simulate complications of therapy. A method of differential diagnosis and treatment is presented. Evidence is also shown that the patient with active L. E. can metabolize large amounts of testosterone without virilization during exacerbations of the disease. Three cases of the syndrome of acquired hemolytic anemia as the presenting manifestation of L. E. are demonstrated. Data suggesting the fact that most of the hematologic abnormalities of L. E. may be due to hypersplenism are included. Hyperthyroidism appeared during treatment in two patients with L. E.

Practical Medical Mycology—The Culture and Identification of Fungi as an Office Procedure

J. WALTER WILSON, University of Southern California and ORDA A. PLUNKETT, University of California at Los Angeles, Los Angeles.

This exhibit demonstrates several innovations by which many of the objectionable features of handling the diagnosis of fungous diseases in the office may be eliminated. A simplified method of culture is illustrated. The identifying features of all pathogenic fungi are described. Culture contaminants are included to prevent the confusion which they usually cause.

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951

Histopathological Staining—Special Staining for Dermatopathology

LOUIS H. WINER, NELSON PAUL ANDERSON, AVIS GREGERSEN and LLOYD MATLOVSKY, University of Southern California School of Medicine and Los Angeles County General Hospital, Los Angeles.

A series of color transparencies of various dermatological diseases is presented with special stains to bring out certain features relative to these diseases.

Diagnosis of Diseases of the Skin by the Cytologic Smear Technique

LOUIS H. WINER and G. DOUGLAS BALDRIDGE, School of Medicine, University of California at Los Angeles, and Wadsworth General Hospital, Los Angeles.

The exhibit consists of colored transparencies of cytologic smear preparations from various forms of skin pathology. Cytologic and biopsy preparations taken simultaneously from a single skin lesion are presented to emphasize the practical value of this new technique. A pictorial demonstration of the methods of obtaining and preparing cytologic specimens will be made.

Definitive and Differential Diagnosis of Poliomyelitis

HART VAN RIPER, National Foundation for Infantile Paralysis, Inc., New York.

The exhibit presents pertinent data on symptomology, muscles and nerves most frequently involved, traumatizing factors, the physical examination and clinical laboratory findings which contribute to making a differential diagnosis of poliomyelitis.

Educational Activities of American College of Surgeons

WALTER E. BATCHELDER, American College of Surgeons, Chicago.

Diagrams and charts describe Sectional Meetings and work of College's Committees on Trauma, Cancer and Graduate Training, and a chart shows the organization of the proposed Commission on Hospital Accreditation.

Blue Shield Medical Care Plans

FRANK E. SMITH, KENNETH E. TRIM and BETTY B. HORTON, Blue Shield Medical Care Plans, Chicago.

The exhibit presents the story of enrollment growth, financial status, and extent of physician participation. Of primary interest is the record of frequency and cost of medical and surgical services, identified by type of procedure and classification of service.

Diabetes Detection by the Physician

HOWARD F. ROOT, ARTHUR R. COLWELL and RANDALL G. SPRAGUE, American Diabetes Association, New York.

Exhibit consists of charts and posters describing the steps which are necessary to arrive at a diagnosis of diabetes mellitus. The role of the physician in detecting new cases of diabetes is emphasized.

Tests for Intoxication

HERMAN A. HEISE, Committee on Medicolegal Problems, American Medical Association, Chicago.

The exhibit shows the effect of alcohol related to its per cent in body fluids. Several types of apparatus which are used to determine the per cent of alcohol are presented.

Medical Education

DONALD G. ANDERSON, F. H. ARESTAD, E. H. LEVEROOS, FRANCIS R. MANLOVE, Council on Medical Education and Hospitals, American Medical Association, Chicago.

The exhibit of the Council on Medical Education and Hospitals displays data on medical education, registration and approval of hospitals, training of interns and resident physicians, technical hospital personnel and medical licensure. Data are included pertaining to approved medical schools, hospitals approved for internships and residencies, and approved technical schools.

Etiology of Malpractice

LOUIS J. REGAN and GEORGE E. HALL, Committee on Medicolegal Problems, American Medical Association, Chicago.

The exhibit portrays situations which might give rise to a suit for malpractice against a physician. Warning admonitions are included.

The United States Air Force Patient Air Evacuation System

MAJOR GENERAL HARRY G. ARMSTRONG, United States Air Force Medical Service, Washington, D. C.

A series of charts, photographs and graphs depict the chain of medical evacuation by air from combat zone to definitive care in the United States. Numbers of patients moved under peace and combat conditions are included.

MOTION PICTURES

The motion picture program has been selected with the assistance of the Committee on Medical Motion Pictures. An outstanding group of films will be shown in a hall adjoining the Scientific Exhibit daily from 9:00 a. m. to 10:45 a. m. and from 1:00 p. m. to 3:45 p. m. Each film will be shown once each day. The program follows:

Surgical Approaches to the Knee Joint

LEROY C. ABBOTT, Veterans Administration, San Francisco.

The approaches used in this film are the median parapatellar, the approach for excision of the medial meniscus, the approach to the lateral compartment of the knee, and an especially well

shown dissection of the popliteal space and the posterior knee compartment. It depicts the anatomic rather than the pathologic. Sound, 36 minutes.

Surgical Management of Primary Hyperthyroidism

FRANK H. LAHEY, The Lahey Clinic, Boston.

This film demonstrates the method of raising the skin flaps, the preservation of the recurrent laryngeal nerve, the demonstration of the parathyroids preserved and the method of doing a radical subtotal thyroidectomy as employed in this clinic. It also demonstrates the method of exposure of the upper pole, the method of ligation of the inferior thyroid artery and the method of complete removal of all the isthmus from the trachea. Sound, 21 minutes.

Uterine Cancer—The Problem of Early Diagnosis

AMERICAN CANCER SOCIETY, New York, and NATIONAL CANCER INSTITUTE, United States Public Health Service, Bethesda, Md.

The incidence of cancer of various sites in the female genital tract is given and the survival rates indicated for each. Symptomatology and aids in diagnosis are presented in animated drawings for each stage of cervical cancer, including Stage O. The role of cytology in early detection is stressed, its technique described and diagnostic criteria illustrated. Cautionary measures to be taken in using the method are indicated. It also includes the Schiller test and methods of biopsy, and emphasizes the importance of periodic bimanual and speculum examination of the cervix. Several case reports illustrate these points. Sound, 20 minutes.

The Exfoliative Cytologic Method in the Diagnosis of Gastric Cancer

GEORGE N. PAPANICOLAOU and WILLIAM A. COOPER, New York.

The background of this cytologic method is briefly presented. Its present usefulness and its disadvantages are indicated. The procedure is presented by live photography and animated drawings. Photomicrographs showing normal and abnormal smears with their criteria are presented with a visual and narrative summary of three typical case histories. Results of this technique in 100 patients with gastrointestinal complaints suspicious of gastric carcinoma illustrate the effectiveness of this technique. Sound, 20 minutes.

Self Preservation in an Atomic Attack

THE ARMED FORCES SPECIAL WEAPONS PROJECT, Washington, D. C.

This film teaches the importance of the individual knowing how to defend himself against the effects of an atomic bomb explosion. In this instance servicemen are taught the means of protection to be used should they be in a civilian area which is bombed. Excellent live photography, models and animation are used to point out the types of explosions which may occur as well as the method of protection to be used in a variety of circumstances. Sound, 18 minutes.

The Bone Bank

PHILIP D. WILSON, New York.

The film begins with diagrams and definitions of autogenous, syndrogenous and homogenous bone and describes how homogenous bone may be preserved by refrigeration or by chemical means. The usual sites from which bone is obtained for refrigeration and later use are shown in brief shots from operations. The method of storing bone in a deep-freeze unit and the technic of culturing it to test sterility are depicted. Sound, 26 minutes.

Operation Blood Bank

CUTTER LABORATORIES, Berkeley, Calif.

After a brief introduction dealing with the donor procurement activities, a donor is followed from the moment he enters, has a physical examination, signs a release, and has his blood examined. The technique of venipuncture, the handling of the donor, and the collection of the blood, including the extra specimens for additional laboratory tests are shown. After the blood is drawn, the donor is given some refreshment; his blood is placed in the refrigerator and is then shipped from the central blood bank to branch depositories in hospitals. Sound, 14 minutes.

Physical Medicine in the Home Treatment of Arthritis

GORDON M. MARTIN and HOWARD F. POLLEY, Mayo Clinic, Rochester, Minn.

This film is designed to supplement actual instruction treatments in physical medicine procedures for home use for the patient with arthritis. Details of simple techniques for applying heat and principles of massage which may be administered at home are presented. Correct methods for doing active assistive exercises and for maintaining or improving range of joint motion are demonstrated. One section emphasizes the importance of proper postural alignment in bed, sitting and walking. Certain supports to prevent and correct deformities may be prescribed. The patient is instructed in the importance of determining the proper balance between "rest and exercise" as it applies to his individual problem. Silent, 31 minutes.

The Diagnosis of Poliomyelitis

NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, INC., New York.

This picture follows a doctor from the moment he is called in to treat a young boy with "grippe-like" symptoms to the time he arrives at his final diagnosis of poliomyelitis. The film begins with the initial visit to the boy's home, taking the case history, and the physical examination. It reviews, by means of actual clinical examples, the outstanding symptoms of spinal and bulbar poliomyelitis that should be looked for during the physical examination and presents examples of the conditions with which poliomyelitis is most frequently confused. In addition, the film gives graphic information on the pathology of poliomyelitis and on the significance of findings in the cerebrospinal fluid. The film ends with the transfer of the boy to the hospital, stressing the importance of keeping the patient's body in good alignment for prevention of deformities. Sound, 30 minutes.

Heparin in the Prevention and Treatment of Thrombosis

THE UPJOHN COMPANY, Kalamazoo, Mich.

This motion picture covers the discovery, chemistry, physiology, manufacturing methods, and clinical application of heparin. The major portion of the film is devoted to clinical application, with particular emphasis on its use in treating peripheral venous thrombosis. There is also considerable emphasis on the various methods of administration of this drug including the control by frequent determinations of the venous coagulation time. It concludes with a comparison between heparin and bishydroxycoumarin. Sound, 27 minutes.

Extraperitoneal Caesarian Section

A. B. ABARBANEL, Los Angeles.

This film shows modifications of previous techniques utilizing (1) a V shaped abdominal incision; (2) a Y shaped fascial incision; (3) blunt dissection laterally; (4) longitudinal incision of periuterine fascia allowing easy lateral bladder retraction; (5) use of guide sutures at upper right and lower left angles of exposed uterus; (6) a Z shaped uterine incision. Sound, 16 minutes.

V 14
1951

THE TECHNICAL EXPOSITION

A Showing by More Than 165 Firms

NEW REMEDIES
LATEST BOOKS • SPECIAL FOODS
IMPROVED APPARATUS and INSTRUMENTS

To a busy practitioner an opportunity to see a compact, comprehensive showing of recognized developments in his field—to check up on new ideas . . . new applications . . . new methods—is too important to miss. The Technical Exposition at this Fifth Clinical Session in Los Angeles offers you this opportunity.

Occupying the entire main floor of the Shrine Convention Hall, the exhibits feature products, services, and information that have a real value for the profession today. Each and every one has something of immediate interest.

More than fifty firms from the pharmaceutical industry present important discoveries, with laboratory or research personnel to discuss the scientific phases of the products. Leading medical book publishers give you an insight into their best offerings and make it possible for you personally to examine almost any book of current interest. Instrument, apparatus, and supply houses provide extensive displays of equipment, with engineers or other qualified individuals to give technical assistance in the use of the equipment. Producers of foods for infant feeding and other special purposes show how closely they are following the newer developments in nutrition. On all sides are opportunities to acquire usable information on pressing problems of everyday practice.

From 8:30 a. m. to 6:00 p. m. each day and until Friday noon, the Technical Exposition will be in full activity. All physicians attending the Session are cordially urged to spend as much time as possible in viewing and examining the many features which make up the Exposition. On this and the following pages, brief descriptions of the exhibits indicate the wide variety of interest to be found.

THOS. R. GARDINER,
Business Manager and Director of Technical Exhibits

Books

F. A. Davis Company
Booth E-14

Here is the new *Loose Leaf Cyclopedia of Medicine, Surgery, and Specialties.* You will be interested in the special terms available during the meeting, particularly if you are a subscriber to a previous edition. Ask representatives at the booth about these terms. Other new books and new editions presented are: Stroud, *Cardiovascular Disease;* Lederer, *Ear, Nose and Throat;* Pillmore, *Clinical Radiology;* Troncoso, *Diseases of the Eye;* McCrea, *Clinical Cystoscopy;* Alpers, *Clinical Neurology;* Goodale, *Clinical Interpretation of Laboratory Tests;* Judovich, *Pain Syndromes;* Kampmeier, *Physical Examinations;* and Strumia, *Blood and Plasma Transfusions.*

Encyclopaedia Britannica, Inc.
Booth B-1

This venerable reference work that is eight years older than the Declaration Of Independence will merit a "stopover" on your tour of the exhibits. First published in 1768 by a "Society of Gentlemen," the 24-volume set today is written by experts all over the world. In cooperation with specialists at the University of Chicago, with which Britannica is affiliated, articles are constantly surveyed to keep them abreast of modern events and discoveries.

Lea & Febiger
Booth C-3

Lea & Febiger invites you to examine these new books and new editions: Soffer, *Diseases of the Endocrine Glands;* Goldberger, *Heart Disease;* Peck and Klein, *Therapy of Dermatologic Disorders;* Musser-Wohl, *Internal Medicine;* Wintrobe, *Clinical Hematology;* Eiler and Eller, *Tumors of the Skin;* Ritvo, *Chest X-Ray Diagnosis;* Rice, *Low-Sodium Diet;* Bortz, *Diabetes Control;* Mulligan, *Syllabus of Human Neoplasms;* Shurtleff, *Children's Radiographic Technic;* Town, *Ophthalmology;* Quick, *Physiology and Pathology of Hemostasis;* Levinson and MacFate, *Clinical Laboratory Diagnosis;* Davidoff and Dyke, *The Normal Encephalogram;* Grollman, *Pharmacology and Therapeutics;* Holmes and Schulz, *Therapeutic Radiology;* and other standard titles of interest to all physicians.

J. B. Lippincott Company
Booth C-4

J. B. Lippincott Company presents, for your approval, a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

C. V. Mosby Company
Booth C-7

New Mosby books for your inspection include: *Handbook of Pediatric Medical Emergencies* by DeSanctis-Varga; Bray's *Clinical Laboratory Methods;* Evans' *Medical Treatment;* Hampton's *Wounds of the Extremities in Military Surgery;* Friedman's *Modern Headache Therapy;* Herrmann's *Methods in Medicine;* Kleiner's *Human Biochemistry;* Key's *Management of Fractures, Dislocations and Sprains;* and many others.

W. F. Prior Company, Inc.
Booth E-2

The Prior Company is demonstrating a service designed for the busy physician who finds it difficult to read even a small portion of the flood of medical literature that is published.

W. B. Saunders Company
Booth C-1

An invitation is extended to all doctors attending this Clinical Session to visit the Saunders exhibit and look over their complete line of books including: Hyman's *Integrated Practice of Medicine*, Hyman's *Progress Volume*, Alvarez' *The Neuroses*, Cecil's *Textbook of Medicine*, *Surgical Practice of the Lahey Clinic*, *American Illustrated Medical Dictionary*, Krusen's *Physical Medicine and Rehabilitation for the Clinician*, Sandweiss' *Peptic Ulcer*, Meschan's *Atlas of Normal Radiographic Anatomy*, Cecil's *The Specialties in General Practice*, and many other new books and new editions.

Today's Health Magazine
Booth E-20

Leave your mailing address with the attendant at the booth, and a current copy of *TODAY'S HEALTH* will be mailed to your home or office —without any obligation. See for yourself how *TODAY'S HEALTH*, published by the American Medical Association, will give your waiting patients and friends a better understanding of your work—how it will help to discourage self-medication and to instill faith in scientific medicine.

Diagnostic Devices

—

Allergy & Medical Products Co.
Booth B-22

Beck-Lee Corporation
Booth D-20

Cardi-All, a new light-weight, direct writer with many unique features—compamatic circuit, automatic protection, patient fused—is shown by Beck-Lee Corporation. Other outstanding products are their model E quartz string galvanometer type electrocardiograph and the quartz string electrocardiograph with the record automatic camera. Trained technicians will be in attendance to demonstrate and discuss these unique features.

Edin Company, Inc.
Booth B-14

The new 400A series electroencephalographs are featured by Edin Company, along with model 220 electrocardiograph. Medical research equipment such as ink-writing oscillographs and research amplifiers are also displayed. This company has pioneered many medical research instruments. Engineers at the booth welcome your inquiries.

Electro-Physical Labs., Inc.
Booth E-23

The Cardiotron PC-2—a pioneer direct writing electrocardiograph—is discussed in booth E-23. Cardiotron features instantaneous lead switching, exclusive Permograph abrasion, and solvent resistant paper, producing a truly permanent record.

Jones Metabolism Equip. Co., Inc.
Booth F-26

The basal metabolism test has become an important tool in almost every routine clinical examination, as evidenced by the millions of tests run annually. Modern metabolism testing requires the use of equipment which will give fully satisfactory results on all patients. At the Jones exhibit, trained personnel will be happy to explain the features of the Jones Multi-Basal, a unit specially designed to accommodate all types of patients, regardless of size or breathing irregularities.

Sanborn Company
Booth B-5

Sanborn instruments shown here include the direct-writing Viso-Cardiette; the Metabulator, latest model metabolism tester; Balistocardiograph; and Electrophrenic Respirator. Full data is also available concerning the Sanborn Poly-Viso and Twin-Viso multi-channel biophysical research recorders; the Electromanometer, for pressure recordings; and other new Sanborn instruments for research, teaching, and diagnosis.

Technical Associates
Booth E-9

This exhibit includes a demonstration of the Technical Associates' specially designed apparatus for the detection and location of brain tumors. Complete isotope laboratory service and equipment are also demonstrated.

Dietetic Products

—

Beech-Nut Packing Co., Inc.
Booth B-18

The Beech-Nut Packing Company features Strained and Junior Foods with particular emphasis on its newest products, Strained Garden Vegetables and Strained Sweet Potato. Nutritionists, in attendance at the booth, will be pleased to answer your inquiries regarding these baby foods or to discuss any phase of nutrition in which you might be interested.

The Best Foods, Inc.
Booth E-17

Nucoa Margarine . . . Hellmann's and Best Foods Real Mayonnaise . . . Hellmann's and Best Foods French Dressing . . . Hellmann's and Best Foods Sandwich Spread . . . and Best Foods Mustard with Horseradish comprise The Best Foods, Inc. exhibit. Miss Elsie Stark, Director of Consumer Education, will welcome you at the booth and provide information on the properties and uses of Best Foods products.

Carnation Company
Booth D-23

A cordial reception awaits you at the Carnation Merry-go-round exhibit in D-23. This unique display shows that Carnation Milk is a first choice in infant feeding. Valuable literature on additional uses of Carnation Vitamin D Evaporated Milk for child feeding and general diet purposes is available for distribution.

Chappius Company
Booth E-27

Out of the west comes Lacosal, a new salt-substitute made by the Chappius Company of Burbank. Enhancing natural food flavors, it leaves no bitter after-taste, can be used in cooking, and is dietetically free of both sodium and potassium. Lacosal is distinctively presented at this Clinical Session for edematous patients on low-sodium diets because of heart, kidney or certain other disorders.

The Coca Cola Company
Booths A-2, 4

Ice-cold Coca-Cola is being served through the courtesy and cooperation of the Coca-Cola Bottling Company of Los Angeles and The Coca-Cola Company.

Gerber's Baby Foods
Booth D-18

Nutritional facts about Gerber's new Rice Cereal may be had in booth D-18. This new important Rice Cereal is supplemented with selected cortical portions of the rice grain, naturally rich in vitamin-B complex. Enriched also with iron and calcium, the finished pre-cooked cereal more than represents whole-grain rice in nutritional values.

Jackson-Mitchell Pharmaceuticals, Inc.
Booth B-19

Representatives at the exhibit of Jackson-Mitchell Pharmaceuticals (formerly known as Special Milk Products) explain how the already well-known Meyenberg Evaporated Goat Milk product is packed in new, hermetically sealed, enamel-lined cans which greatly improve the flavor and keeping qualities. Meyenberg Evaporated Goat Milk in the new containers along with Hi-Pro, a high protein-low fat basic milk food, are on display at booth B-19.

Kellogg Company
Booth E-24

Physicians interested in diet therapy will want to see Kellogg's special diet guide folder. In compact form are included: bland, low caloric, high caloric, sodium restricted, low fat, low residue, high residue, high protein and high iron diets, as well as diets for young children and mothers to be. Diet sheets giving suggestions for additional restricted diets are available in pad form. These diets have been carefully outlined following the recommendations of well-known authorities on diet in disease. Various health education pamphlets are also offered.

Loma Linda Food Company
Booth A-5

The Loma Linda Food Company presents Soyalac, a time-tested, scientifically designed infant food which is readily digestible, tasty, and nutritious. When liquified, it has a striking resemblance to animal milk in its physical properties; and aids in solving many feeding problems, especially allergy. Attendants at the booth will be pleased to sample and discuss Soyalac hypo-allergenic infant food.

M & R Laboratories, Inc.
Booth C-12

Infant and child nutrition keynote the M & R exhibit, booth C-12. Representatives will be happy to discuss the merits of Similac and Cerevim, featured products.

Mead Johnson & Company
Booth D-1

Mead Johnson & Company of Evansville, Indiana, feature Lactum and Dalactum, convenient formulas of evaporated milk containing Dextri-Maltose, and the four Pablum Cereals—Pablum Mixed Cereal; Pabium Oatmeal; Paoium Rice Cereal; and Pablum Barley Cereal. Representatives will be glad to discuss Lonalac, which is useful in low sodium diets.

Pepsi-Cola Company
Booth B-27

During the entire course of this Clinical Session, Pepsi-Cola Company is serving its product to A.M.A. delegates and their friends. Of interest to hospital staff personnel and executives of other medical institutions is Pepsi's exhibit of its new club-size bottle and vending machine.

Pet Milk Company
Booth C-19

A miniature working model of an evaporated milk plant is again exhibited by Pet Milk Company. This exhibit offers an opportunity to obtain information about the production of Pet Milk, its use in infant feeding, and the time-saving Pet Milk services available to physicians. Miniature Pet Milk cans are given to physicians who visit the Pet Milk booth.

Ralston Purina Company
Booth C-24

The Ralston Purina Company display several new free services at their attractive new streamlined booth. In addition to the well-known and widely used Low Calorie Diets, Allergy Diets, and Infant Feeding Direction forms, you may examine and order for clinical use an excellent Diet for Pregnancy sheet, an 800-Calorie Diet sheet, and the Weight-Watcher, a 36 page pocket-size booklet which contains suggestions for maintaining ideal weight and a calorie count of over 400 foods.

The Seven-Up Company
Booth D-28

The Seven-Up Company cordially invites you to "fresh up" with a chilled bottle of crystal-clear, sparkling 7-Up—the well-known "All-Family" drink.

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Swift & Company
Booth C-6

Liver & Bacon—a new addition to Swift's Meats for babies & juniors is featured at the Swift exhibit. This brings the varieties of Strained and Chopped Meats offered in the Swift line to 7. You are cordially invited to discuss the use of these high-protein, body-building foods in infant diets, also their growing use in adult special diets. Literature and information on clinical research are available.

Office Equipment

Gray Mfg. Co.
Booth A-9

Prominent among the technical exhibits is that of Gray Manufacturing Company—originators and makers of the telephone pay station and manufacturers of the Gray Audograph Electronic Soundwriter. Basically designed to handle business dictation and routine correspondence, this versatile Audograph has been adopted by practicing physicians and hospital personnel for recording the data of medical practice. The many applications in the medical field are demonstrated at the Audograph booth.

Charles R. Hadley Co.
Booth B-12

The answer to many vexing record-keeping problems may be found at the blue and gold Hadley booth, B-12. Representatives are demonstrating the "Write-It-Once" systems. You will see how patients' charges and payments are recorded and how the accuracy of the records is checked each day.

Magnetic Recorders Company
Booth E-25

Magnetic Recorders Company of Los Angeles show forty-two models of wire, tape, and disc recorders. They have accumulated this large stock for your facility to aid in selecting the instrument which will do your work the most efficiently. There is a recorder for every purpose —home, office, studio.

Miles Reproducer Co., Inc.
Booth F-7

Patient's case histories may now be recorded with Miles Walkie-Recordall, a nine-pound briefcase recorder-reproducer. Excellent for interviews, conferences, consultations, this on-the-spot battery recorder—in a closed briefcase—picks up audible speech within forty feet. These and other advantages, including an individual film-band, are discussed by representatives at the exhibit.

The Soundscriber Corp.
Booth F-10

Tycoon dictating and transcribing equipment is presented by SoundScriber, a pioneer in electronic plastic record dictation. The Tycoon, the dictator's instrument, small and compact in light-weight magnesium cabinet, features the new Quick Review microphone which provides instantaneous review of the last few dictated words. The Lady Tycoon, the secretary's transcribing instrument, features a new means of translating the dictator's instructions to the secretary. SoundScribers are adaptable to a wide variety of uses for the physician, such as telephone recording, interview and conference recording, dictation at home, in the automobile, or literally everywhere that electric current is available.

Personnel Bureaus

Continental Medical Bureau
Booth A-8

Up-to-date information on appointments in western and southwestern states is available at the Continental Medical Bureau exhibit, A-8. Tell them what you are looking for and let them help you find it. Offering active individual work on each registrant, this agency is affiliated with Pacific Coast Medical Bureau, Agency of San Francisco.

Shay Medical Agency
Booth B-7

Blanche Shay, director of Shay Medical Agency —a specialized placement service for professional personnel—welcomes your visit to booth B-7 where you may discuss in strict confidence your employment problems. This individual service of international scope embraces the placement of physicians; medical directors of colleges, universities, industries, and pharmaceutical manufacturers; hospital executives, superintendents, technologists, therapists, supervisors, dietitians, etc. Whether you are seeking help, a position, or a new location—whether your needs are immediate or future—Miss Shay can assist you.

Woodward Medical Personnel Bureau
Booth E-3

Mrs. Ann Woodward whose booth contains the complete files of her organization invites all those who are interested in augmenting their present staffs, or those seeking to re-locate, to discuss their requirements with her. Her roster includes the names of some very well-qualified doctors, many of them Diplomates of the various specialties. Numerous opportunities for good security and above-average income are offered by this medical personnel bureau now entering its fifty-seventh year of continued service to the medical profession.

Pharmaceuticals

Abbott Laboratories
Booth C-11

You are invited to have coffee at the Abbott booth, and cookies sweetened with the new non-caloric, heat-stable Sucaryl. Larger than life-size figures are used in the feature exhibits of Sulestrex, new oral estrogen that is odorless and tasteless, and the newly improved Nembutal Elixer for mild sedation.

American Hospital Supply Corp.
Booth F-21

The American Hospital Supply exhibit highlights a display of American Serums (prepared by Dade Reagents, Inc.), a complete array of grouping and testing serums processed from human donors to N.I.H. specifications; Acthar, Armour Laboratories' brand of ACTH; Aero-Klenz, an effective hospital deodorant that kills many noxious odors; and Tomac Oral Protein Supplement, a whole protein food that supplies the daily requirements of protein in a pleasant-tasting food form.

Ames Company, Inc.
Booth D-16

The Ames Diagnostic Kit is being demonstrated in booth D-16. This small kit, measuring 3 x 9 inches, contains Clinitest, for urine-sugar; Bumintest, for albumin; Acetest, for acetone; and Hematest, for occult blood. No extra reagents, equipment, or accessories are needed with this kit, designed for the physician's office, small laboratory, or hospital floor.

The Armour Laboratories
Booth E-12

You are cordially invited to visit The Armour Laboratories exhibit, E-12, featuring Acthar (ACTH—Armour, brand of corticotropin) and to discuss the latest developments in this important new agent—along with other Armour Laboratories' products, such as Thyroid, Liver, and Adrenal Cortex Extract.

Ayerst, McKenna & Harrison, Ltd.
Booth D-10

Physicians attending this A.M.A. Clinical Session are cordially invited to visit the Ayerst booth where representatives will be happy to answer your inquiries concerning Premarin, Exorbin, or other Ayerst specialties.

Don Baxter, Inc.
Booth E-21

Well informed Baxter representatives are discussing several of the newest developments in parenteral therapy. New Baxter intravenous solutions in Vacoliter containers are displayed. New and special Baxter blood transfusion equipment is demonstrated. You'll see the new Baxter plastic intubation tube and oxygen catheters for greater patient comfort.

Biochemical Methods, Inc.
Booth B-1

Biochemical Methods, Inc., is exhibiting Gutta Test, a series of newly developed reagents that will perform a chemical analysis of urine in sixty seconds with a single drop of urine and a single drop of reagent per test. The tests performed are pH, albumin, sugar, acetone, indican, bile, and occult blood. Demonstrations of this unusual procedure are given at the booth to show the simplicity, economy, and accuracy of Gutta Test.

Boyle & Company
Booth B-24

An exhibit of their antibiotic testing tablets, a recent development of their own research, has been arranged for you by Boyle & Company. These products provide a simple, rapid, accurate method of determining the relative sensitivity of bacteria to the various antibiotics.

Burroughs Wellcome & Co., Inc.
Booth D-25

Two of their outstanding products are featured by Burroughs Wellcome representatives in booth D-25: Intermediate-acting Globin Insulin ('B. W. & Co.'), a clear solution which requires no preliminary shaking, and is now official in the U.S.P.; and Digoxin ('B. W. & Co.'), a pure, crystalline glycoside which offers the advantage of relatively rapid elimination and hence shorter duration of the toxic effects of possible overdosage.

G. W. Carnrick Co.
Booth A-17

Emphasized at the GWC exhibit is Dioloxol (Council-accepted brand of mephenesin), a new orally-administered muscle relaxant drug for certain spastic and neuromuscular disorders. Acting through the brain and spinal cord, it is indicated in infantile cerebral palsy, hemiplegia, diplegia, tetanus, Parkinson's Syndrome, and other muscular spastic conditions, and is employed as an adjunct to psychotherapy in anxiety tension states.

The Central Pharmacal Co.
Booth F-8

Visitors to the Central Pharmacal exhibit will learn about their Theophylline-Sodium Glycinate —Synophylate. To make your visit interesting, the firm is also showing its other Council-accepted products.

Chilcott Laboratories
Booth C-21

Rapid and accurate prothrombin time determinations are demonstrated here with a new, easily-prepared reagent—Simplastin. Clinical reports evaluating this simplified procedure, as well as a new, graphic method of reporting the patient's absorption of oral anticoagulants, may be inspected. Patient instruction material for use with Cellothyl tablets or granules in the management of bowel dysfunction is also offered.

Chilean Iodine Educ. Bureau, Inc.
Booth B-2

The Chilean Iodine Educational exhibit, booth B-2, calls attention to the place of iodine in surgery, medicine, and nutrition. Samples of U.S.P., N.F., and Council-accepted preparations containing iodine are displayed. Representatives on hand offer the Bureau's services without cost or obligation.

Church and Dwight Co., Inc.
Booth C-15

The use of Arm & Hammer and Cow Brand Bicarbonate of Soda as a dentifrice is emphasized in the Church and Dwight exhibit, booth C-15. Acceptable to the Council on Dental Therapeutics of the American Dental Association, their value as a tooth powder is well known. Attendants at the booth will also be glad to discuss with you the many uses of Bicarbonate of Soda in medical practice.

Ciba Pharmaceutical Products, Inc.
Booth C-20

Ciba Pharmaceutical Products, Inc. of Summit, New Jersey, invites you to visit its exhibit featuring Pyribenzamine Hydrochloride which provides maximum allergic relief with minimal side effects. Representatives in attendance will be glad to discuss the role of Pyribenzamine Hydrochloride in the treatment of hay fever and other allergies.

Commercial Solvents Corp.
Booth C-22

CSC Pharmaceuticals feature the antibiotic Bacitracin in the form of topical ointment and ophthalmic ointment. Bacitracin is low in sensitizing power when used on the skin and in the eye. It may be prescribed with little fear of allergic manifestations, a distinct advantage over penicillin locally applied. Since Bacitracin is frequently effective against organisms resistant to penicillin, its use in ointment form is an effective means of broadening the antibacterial spectrum in topical therapy.

Cutter Laboratories
Booth D-21

Immunizing and therapeutic agents for children's diseases are the focal points of attention in the Cutter exhibit. Other attractions include: Alhydrox adsorbed toxoids and combined vaccines; Human Blood Fractions such as Hypertussis; Immune Serum Globulin; Albumin; a complete line of Cutter Saftiflask Solutions; expendable equipment for administration; blood bottles; and plastic pressure sets.

The Denver Chemical Mfg. Co., Inc.
Booth C-23

Galatest powder for the instantaneous determination of urine sugar and Acetone Test (Denco) for the detection of acetone in urine are exhibited. You are cordially invited to witness demonstrations of these "spot tests" for sugar and acetone. Galatest powder and Acetone Test (Denco) offer advantages of accuracy, simplicity, and economy in routine urinalysis.

Eaton Laboratories, Inc.
Booth D-7

Among the Council-accepted Eaton products shown are the several dosage forms of the topical antibacterial agent, Furacin: Furacin Soluble Dressing, Furacin Solution, and Furacin Anhydrous Ear Solution; Aspogen—for treatment of peptic ulcers; Paracin—scabicide, pediculicide and ovicide, usually effective in one application. The technic of use of Furacin impregnated gauze and Furacin Solution by atomizer for the treatment of burns is being demonstrated.

Endo Products, Inc.
Booth C-18

The Endo exhibit blends the old with the new. In an early-American apothecary setting appear modern Council-accepted items of Endo research. Noteworthy additions to the list are: Hycodan, a new antitussive, more effective in smaller doses than codeine; Mesopin, a gastrointestinal antispasmodic of established effectiveness; Norodin, a modern psychomotor stimulant and antidepressant; Hyflavin, soluble and active riboflavin; and House Dust Extract, a purified concentrate of that ubiquitous allergen.

Fellows Medical Mfg. Co., Inc.
Booth E-6

Capsules Chloral Hydrate Fellows are presented by Fellows. Introduced in 3¼ grain blue and white capsules, they are now available in double strength 7½ grain blue capsules. Chloral hydrate, a classic in medicine for nearly a century, figures today as a standard in every textbook. It is the first time that chloral hydrate has been successfully encapsulated, permitting the effective use of this important drug for daytime sedation and hypnosis. Chloral hydrate produces a normal-type of sleep, without excessive depressant aftereffects.

The Harrower Laboratory, Inc.
Booth F-24

The Harrower technical exhibit presents Mucotin, the coating antacid. The exhibit features the coating action of the mucin antacid, Mucotin, on a large gastric ulcer which is the central theme of the exhibit. In addition, complete case histories with gastroscopic pictures show various stages of a healing ulcer. Reprints, samples, and literature are available at the exhibit.

Holland-Rantos Company, Inc.
Booth E-4

Several Koromex combination sets are featured in the Holland-Rantos exhibit of Koromex Diaphragms, Jelly and Cream. The Koromex Diaphragm Combination and Koromex Set Complete, which include both Koromex Jelly and Cream at no extra cost, permit comparison to determine patients' individual preference. Latest clinical data is available on the high percentage of clinical effectiveness in contraceptive practice of Koromex Jelly—used even without a diaphragm—in those cases where simplicity of method is essential to patient acceptance.

Hyland Laboratories
Booth B-23

Standardized biologicals and serums derived from human whole blood are presented in the Hyland exhibit. Products on display include Irradiated Normal Human Plasma; Irradiated Pertussis Immune Serum, derived from healthy hyperimmunized adults and useful in the passive prevention and treatment of whooping cough; and a complete line of Blood Grouping Serums, Rh Typing Serums, and other blood diagnostic reagents. Blood banking specialties are also shown.

Lanteen Medical Laboratories, Inc.
Booth D-8

Representatives in D-8 will be happy to discuss the improved Lanteen technique, a dual method of contraception involving the Lanteen Flat Spring Diaphragm and Lanteen Spermatocidal Jelly. Alkagel, a pioneer antacid which provides prompt and prolonged neutralization of gastric acidity and relief from peptic ulcer, is also on display.

Lederle Laboratories
Booth A-3

Lederle Laboratories, Division of American Cyanamid Company, feature Aureomycin. For distribution to physicians, there is literature relating to the more recent studies in the use of this versatile antibiotic, as well as an especially revised, annotated bibliography containing references arranged by specialties for the convenience of the clinician. This bibliography is the most comprehensive available collection of references dealing with studies on Aureomycin from the time of its introduction in 1948.

Eli Lilly and Company
Booths D-12, 14

Your Lilly medical service representative cordially invites you to visit the Lilly exhibit, booths D-12, 14. In commemoration of the seventy-fifth anniversary of its founding, Eli Lilly and Company display a statuary group dedicated to and symbolizing the cooperation between medicine, research, and pharmacy. Many new therapeutic developments are featured and literature on these products is available.

McNeil Laboratories, Inc.
Booth D-3

McNeil Laboratories extend a cordial invitation to A. M. A. members to visit their exhibit in booth D-3. Butisol Sodium, an "intermediate" sedative, and Syndrox Hydrochloride are among the Council-accepted products shown.

Merck & Company, Inc.
Booth C-9

Cortone (Cortisone Merck) is the focal point of attention in booth C-9. Among the conditions in which Cortone has produced striking clinical improvement are: rheumatoid arthritis and related rheumatic diseases; eye diseases including nonspecific iritis, iridocyclitis, uveitis; and dermatitis, including cases secondary to drug reactions. Cortone is supplied in a saline suspension for parenteral use, in tablets for oral use, and in an ophthalmic suspension and ointment.

The Wm. S. Merrell Company
Booth E-26

Merrell features Diothane Ointment, a topical anesthetic widely prescribed for positive and prolonged comfort in hemorrhoidal pain, also in other areas where it is desirable to provide a protective antiseptic coating. Of low toxicity, Diothane has established a reputation for "comfort in hemorrhoidal pain."

The National Drug Company
Booth D-19

Featured products in the National Drug exhibit are Resinat, an essentially non-toxic anion exchange resin; Protinal Powder, a whole protein carbohydrate mixture; and Diphtheria, Tetanus and Pertussis Vaccine, combined triple immunization. National's vast array of Council-accepted biological and pharmaceutical preparations also merit your attention.

Ortho Pharmaceutical Corp.
Booth D-24

Your visit to D-24 will be welcomed by Ortho representatives who will be happy to greet you and discuss their line of conception control products with interested physicians.

Parke, Davis & Co.
Booths D-2, 4

You are cordially invited to visit the Parke-Davis exhibit devoted to Chloromycetin. The first antibiotic made both by fermentation and by chemical synthesis, Chloromycetin has consistently demonstrated its clinical effectiveness in the treatment of patients with infections due to a wide spectrum of microbiologic forms, including many gram-negative and gram-positive bacilli and cocci, rickettsiae, and certain viruses. Representatives in constant attendance will be pleased to discuss this and other meritorious Parke-Davis products.

Chas. Pfizer & Co., Inc.
Booth C-10

Terramycin, newest of the broad-spectrum antibiotics, forms a dramatic central feature of the display of Chas. Pfizer & Co., Inc., Brooklyn, N. Y. The newest dosage forms of Terramycin are exhibited and indications for use are described.

Rexall Drug Company
Booth D-22

Rexall has been engaged in the manufacture of fine pharmaceuticals including U. S. P. and N. F. products since 1903. There are 10,000 independent Rexall drug stores in the United States and Canada who stand ever ready to give your prescriptions the individual attention and precise compounding each requires. Featured in booth D-22 are Council-accepted, buffered, pleasantly flavored penicillin tablets. The display also includes attractive proofs of the ethical, public service type of advertising Rexall has sponsored in medical journals.

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Riker Laboratories, Inc.
Booth F-19

Sandoz Pharmaceuticals
Booth B-13

With pride and pleasure, Sandoz Pharmaceuticals invite you to visit their scientific type exhibit in booth B-13. Representatives at the booth will be pleased to welcome you.

G. D. Searle & Co.
Booths C-26, 28

An ingenious, animated display demonstrates the anticholinergic action of Banthine on the ganglia of the parasympathetic and sympathetic systems and the nerve endings of the parasympathetic system. Representatives discuss the various uses for which Banthine has been found successful. Another animated model simulates the vestibular disturbances believed to cause motion sickness, for which Dramamine is indicated. Also exhibited are Searle Aminophyllin, Metamucil, Diodoquin, Alidase, Iodochlorol, and Sylnasol.

Sharp & Dohme, Inc.
Booth D-5

Visitors attending the A. M. A. Fifth Annual Clinical Session are cordially invited to visit the Sharp & Dohme exhibit. Unusual Specialties include 'Sulfasuxidine' and 'Sulfathalidine', enteric bacteriostatic agents. Blood Group Specific Substances A and B, used in conditioning Group O Blood, will be of major interest.

Smith-Dorsey
Booth C-25

Smith-Dorsey is featuring: Doraxamin, an improved treatment for peptic ulcer; Dorsaphyllin, a buffered aminophylline possessing better gastric tolerance; and many council-accepted injectables. Sodium para-aminosalicylate, an adjunct therapy in tuberculosis, and H. P. S. Sixty, a well tolerated protein supplement, are also of major interest.

E. R. Squibb & Sons
Booths D-11, 13

Visual Aids Service is featured by Squibb at this Clinical Session. This service comprises a comprehensive assortment of technical leaflets, practical aids, and actual showings of excerpts of the newest film from the Squibb Medical Film Library. You are welcome at the Squibb booths.

R. J. Strasenburgh Co.
Booth C-13

Naprylate (Brand of Caprylic Compound) in the treatment of monilial and other superficial fungus infections, and Raphetamine Phosphate in mild psychogenic depressive states and obesity are featured. Qualified medical service representatives in attendance demonstrate the properties of Naprylate and Raphetamine Phosphate in their various dosage forms.

Strong, Cobb & Co., Inc.
Booth C-17

Automatic injection of aqueous suspension of procaine penicillin G is now available in the sterile, ready-to-use, disposable Ampin. Each Penicillin Ampin is packaged in an individual plastic tube that makes it convenient for carrying in the physician's bag or vest pocket without danger of damage to the Ampin. Civilian disaster units are adopting the Ampin in ever increasing numbers because they realize that water for solution of injection and heat for sterilization may be practically non-existent during disaster conditions. The Ampin does not require either and is ready for immediate use whenever the need arises. Emergency, lifesaving drugs, as well as narcotics, are also available in the Ampin.

U. S. Vitamin Corp.
Booth E-10

A new oil-in-water demonstration of Aquasol Vitamin A Drops—providing natural vitamin A in aqueous solution—is given here. While at the exhibit, taste for yourself the new and different sodium-free salt substitute, Co-Salt, which actually tastes like salt, looks like salt, and sprinkles like salt—a boon to your patients on restricted sodium intake.

The Upjohn Company
Booths C-16; D-15

Upjohn presents the anticoagulant family: Heparin, Depo-Heparin, and Dicumarol, with particular emphasis placed upon Depo-Heparin. When heparin is prepared in a gelatin vehicle (Depo-Heparin) and administered intramuscularly, markedly prolonged effects are obtained. A single injection of 1 cc. (200 mg.) of Depo-Heparin will prolong the blood coagulation time for about twenty-four hours.

Varick Pharmacal Co., Inc.
Booth E-15

Varick Pharmacal Co., Inc.—E. Fougera & Co., Inc., cordially invite physicians to discuss with professional representatives preparations of importance to their every-day practice. These preparations include Digitaline Nativelle, Diasal, Aveeno, Polysorb, etc. Literature and samples are available on all products.

Walgreen Drug Stores
Booth E-19

Fifty years of progress in the development of their Dependable Prescription Service is portrayed at the Walgreen exhibit. Two photomurals depict the changes which have occurred since 1901 when the first Walgreen Drug Store was opened and provide a comparison of the equipment used then and now. This informative exhibit features your Walgreen Pharmacist as a Connecting Link between you and your patients. Through his knowledge and skill, he transforms your orders into concrete form for your patients. Courteous, professional service representatives at the booth welcome the opportunity to be of service to you.

White Laboratories, Inc.
Booth D-27

The early detection of breast cancer—current educational campaign of The American Cancer Society—is the theme of White Laboratories' exhibit, booth D-27. Clinical illustrations of the early signs of breast cancer, including dimpling, changes in the breast contour, vascular changes, Paget's disease, etc., are from the Society's latest film available to medical groups only. This film, as well as one for the laity on the method of self-examination, may be obtained by writing to the American Cancer Society, 47 Beaver Street, New York.

Winthrop-Stearns, Inc.
Booth C-27

Winthrop-Stearns, Inc. presents an unusually colorful exhibit based on authentic American Indian Motifs. A number of Council-accepted products—Neo-Synephrine, Salyrgan-Theophylline, Isuprel, Creamalin, Milibis, Diodrase, and Mebaral—are featured, some with accompanying models to illustrate their application. A striking collection of models on amebiasis are also displayed for the first time. Representatives at the exhibit will be pleased to discuss Winthrop-Stearns preparations.

Wyeth, Inc.
Booth C-2

Wyeth Incorporated extends to you a cordial invitation to visit the Wyeth booth where congenial representatives will be pleased to discuss the Wydase exhibit. This semi-scientific presentation takes its theme from the new medical film "Clinical Use of Hyaluronidase." The display pictorially points out basic physiological advantages in the use of Wydase in clysis, nerve block anesthesia, hematomas, and radiopaque urography.

Physical Therapy Apparatus

The Birtcher Corp.
Booth E-21

In line with the June J. A. M. A. article suggesting the replacement of short-wave Diathermy apparatus, the Birtcher Corporation are displaying this type of equipment. Those in attendance may examine the Birtcher Crystal Bandmaster Short-Wave Diathermy, as well as a representative display of accessories which can be used with diatherm apparatus. For those interested, the latest developments in electro-surgical equipment are also shown.

Burton Manufacturing Company
Booth D-6

The dominant note of the Burton exhibit is scientific lighting. Featured are the new Super-Power Light and the new Bullseye Lamp (Coakley Lamp). A lively interest is always present in the Burton Wood's Light which has acceptance of the A. M. A. Council on Physical Medicine and Rehabilitation. Laboratory specialties, including the famous Burton Blood Diluting Pipette Shaker, are other attractions here.

Dallons Laboratories
Booth E-27

The Dallons Laboratories are demonstrating latest developments in Meditherm Short Wave Diathermy apparatus. Of special interest is a visual demonstration on a Panoramic Oscilloscope of the frequency stability of the Mediterm #1600A, without crystal control and with the lowest maintenance costs in medical diathermy. The complete line of Mediquartz Ultra-Violet Generators is also shown.

The DeVilbiss Co.
Booth B-15

The DeVilbiss Company of Toledo, Ohio, welcomes your visit to its exhibit of professional and prescription types of atomizers, nebulizers, and vaporizers. Among the newly developed products is the No. 33 Pocket Atomizer, designed to offer the advantages inherent in an uninterrupted treatment schedule and suitable for any solution. The No. 740 Hand Pump and Nebulizer, which makes a noteworthy contribution to the simplification of the home administration of aerosols and the new No. 149 Overnight Vaporizer are on display.

E & J Manufacturing Co.
Booth E-16

The E & J exhibit is highlighted by the new Anespirator which provides automatic controlled respiration as directed by the anesthetist. It is shown in use with E & J Anesthesior gas machines. All models of E & J Resuscitators are shown including the Resuscinette, which recently gained the Council seal of acceptance.

Everest and Jennings
Booth A-1

Several brand new developments in folding wheel chairs for small children highlight the Everest and Jennings display which includes an improved walker and line of new commodes for home and hospital use. Combining several new features, these commodes and chairs for children are attracting special attention throughout the country. Physicians whose patients cannot use ordinary wheel chairs will be particularly interested in this firm's consultation service.

Medco Products Co.
Booth B-6

An interesting demonstration of the Medcotron Stimulator may be seen in the Medco exhibit. Advantages of the product in the treating of strains, sprains, and dislocations are described at the booth, B-6.

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Mine Safety Appliances Co.
Booth F-9

The latest in intermittent positive pressure equipment, capable of performing mechanical artificial respiration and useful in the treatment of silicosis and other pulmonary disorders is shown by Mine Safety. A highlight of the exhibit is the "breathing man," a mannikin whose lungs are portrayed in action through a plexiglass window.

J. J. Monaghan Company, Inc.
Booth B-19

Raytheon Manufacturing Co.
Booth A-6

Surgical Mechanical Research
Booth B-9

At booth B-9 you will see E. E. N. T. equipment designed for use in a small sized space—consisting of a chair, stool, cabinet (complete with air regulator and electrical rheostats), cuspidor, and suction. Other products on display include a new ear muff and new ear stopper. Primarily designed to prevent acoustic trauma in industrial areas, they are also used by swimmers and light sleepers.

The Tower Company, Inc.
Booth A-11

The latest technics of applying Aire-Cast to give a light, strong, porous cast that is transparent to x-ray and unaffected by water are demonstrated in booth A-11. Other recent developments in the fracture and orthopedic field are shown, including such items as a bone crumbing mill; No. 800 Fracture and Orthopedic Table; and new nylon femoral prostheses which have attracted wide attention in preliminary clinical reports.

Walton Laboratories, Inc.
Booth B-11

Walton Laboratories, Inc. are again exhibiting their complete line of residential, office, and hospital humidifiers. The Walton Humidifier produces nebulized water vapor by centrifugal force, rather than by heat vaporization.

Special Apparel

Anne Alt Brassiere Co., Inc.
Booth B-22

An interesting exhibit is presented by Anne Alt Brassiere Co. Inc., manufacturers of Anne Alt Maternity-Nursing Brassieres, disposable nursing bra pads, and corrective brassieres. These garments are being shown on live models. Miss Anne Alt, the designer, is supervising the exhibit.

Chicopee Mills, Inc.
Booth A-12

You'll be interested in Chicopee's display of Chix Baby Products designed to meet the specifications of doctors and nurses. Of special interest are the new Chix Protective Diaper Liners, now impregnated with methylbenzenethonimum chloride to inhibit the growth of bacteria causing ammoniacal dermatitis. Chix baby products mean extra comfort for baby, extra convenience for mother.

Edwards Shoes for Children
Booth E-9

Representatives of Edwards, "the big house for little shoes since 1900," welcome your visit to booth E-9 and an opportunity to discuss with you the merits of Edwards outstanding children's shoes. You can depend on Edwards Shoes for refinement in quality, construction, and for proper fitting. Normal and corrective styles—from baby's to teenster's—are featured.

Fancee Free Manufacturing Co.
Booth A-7

Your "expectant mother" patients will appreciate knowing about Fancee Free, a comfortable, elastic garter belt, on display in booth A-7. Fancee Free fits around the waist in back and below the abdomen in front to eliminate pressure.

Lov-e' Brassiere Co.
Booth F-15

Lov-e' Brassieres shown in booth F-15 are a highly specialized line of breast supports, available in 18 models and a size range of more than 500 sizes. These brassieres are custom-fitted by trained corsetieres in accordance with the physician's prescription instructions. There are special Lov-e' corrective brassieres for specific breast conditions, available in leading department stores and corset shops throughout the country. Madame Des Lauriers, the designer of Lov-e' Brassieres, is in charge of the exhibit.

NuLift Company
Booth B-28

Spencer, Inc.
Booth C-5

For complete information on Spencer Supports —individually designed garments—visit booth C-5. Of proven clinical effectiveness, Spencer designs are useful adjuncts in the treatment of postural hypotension, chronic arthritis, poliomyelitis, breast conditions including mastectomy, etc. Another feature of the exhibit is Spencer's popular simulated vertebrae model.

Shannon Mfg. Co.
Booth B-28

Tattle Toes
Booth B-26

Tattle Toes prewalking shoes, introduced to the medical profession at the recent A. M. A. Convention in June, are presented in a complete range of colors, sizes, and two additional widths to take care of narrow, as well as chubby, little feet. With the visible growth line, you can look inside baby's shoe while it's on his foot—toes over the line mean "new shoe time."

Vaisey-Bristol Shoe Co., Inc.
Booth F-6

Worn shoes tell an interesting story in the Vaisey-Bristol exhibit featuring Jumping Jack Flexible Shoes for children. John J. McKee, former foot health education director of the Loraine, Ohio, public schools and author of an article in Today's Health on children's feet will be happy to serve you at the booth.

Surgical Instruments and Supplies

Becton, Dickinson and Co.
Booth D-17

In booth D-17, Becton, Dickinson and Co. present a general line of hypodermic syringes, needles, clinical thermometers, diagnostic equipment, and Ace bandages. Special features are their full-footed, full-length Ace Elastic Hosiery and the new Synafit Syringe with clear glass barrel.

Campbell Associates
Booth F-10

Included in the Campbell display of surgical instruments are many new items of particular interest to the general practitioner. Your inspection of the new Lovett disposable umbilical clamp, Babcock and Allis tissue forceps in the new 9" length, the Potts and Blalock pulmonary artery clamps, and Von Petz intestinal suturing instruments is welcomed. Campbell Associates are specializing in imported German-made instruments of exceptional quality.

Ethicon Suture Labs., Inc.
Booth D-9

Drop in and see the unusual Ethicon ranch exhibit at booth D-9. Here in an authentic western ranch setting you will find a complete line of Ethicon sutures and ligatures, featuring a unique demonstration of the Seamless Atraloc needle suture and the new Cuticular line for plastic and emergency surgery.

Hygienic Products Co.
Booth A-11

Introduced here is a new and simple colostomy and ileostomy set, designed with a maximum of comfort and sanitation by a person who had the experience of colostomy himself. Be sure to see it demonstrated in booth A-11.

Macalaster Bicknell Parenteral Corp.
Booth F-11

This exhibit features the new Fenwal ACD Blood Pack Technique—all plastic, disposable equipment for collecting, storing, and infusing whole blood; the Fenwal Pour-O-Vac Technique for supplying complete sterile water requirements of the hospital and for the flasking of all surgical fluids; and the Fenwal System for the manufacture of intravenous solutions within the hospital.

Duncan C. McLintock Co., Inc.
Booth E-11

Duncan C. McLintock Co., Inc., are featuring their Lestreflex flexible adhesive bandage which does not contain rubber or zinc oxide, and the Nulast Bandage of J. & P. Coats (R. I.) Inc. Also displayed is the Lastonet Nylon Elastic Stocking, designed to give long wear and maintain the proper pressure. It is inconspicuous, light weight, and porous.

Miller Surgical Company
Booth A-15

Miller Surgical Company of Chicago, Illinois, in booth A-15 is exhibiting electrically illuminated Gorsch and Miller rectal scopes, rectal snares, smoke ejectors, and coagulators. Other products shown are Miller electro-scalpel and cautery; headlites; Miller ophthalmoscope; and a complete line of illuminated and magnifying surgical diagnostic units.

The Geo. P. Pilling & Son Company
Booth B-4

Again, as in former years, Pilling of Philadelphia displays a complete selection of surgical instruments of interest to all visitors at the Clinical Session. Especially featured is the new Kirby-Thurston Electro-Acoustical Locator for locating gallstones and hard foreign bodies. The usual complete line of E. N. T., bronchoscopic, thoracic and general surger instruments are also shown.

Zimmer Mfg. Co.
Booth A-13

The newly announced Brown Electro-Dermatome is shown at the Zimmer exhibit. Glue, cement, suction cups or other accessories are not required with this instrument which cuts grafts with speed, accuracy and ease. Also on exhibit are acrylic, nylon and stainless steel femoral prostheses; Kuntscher cloverleaf intramedullary pins and instruments; Rush intramedullary pins; Woodruff cut pilot point bone screws, osteotomes, gouges, retractors; Shifrin wire twister; and a new all rubber walking heel.

Toliet Preparations

John H. Breck, Inc.
Booth B-3

Industrial hand preparations are exhibited by John H. Breck, Inc., manufacturing chemists. Designed to aid in the prevention of industrial dermatitis caused by harsh cleansing agents (sometimes used to remove grease, paint, ink or grime), Breck preparations include Hand Cleaner, pH7 Protective Cream, Water Resistant Cream, and Work Cream.

(Continued on advertising page 80)

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THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Edited by . . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

THE LOS ANGELES MEETING

In this issue of THE JOURNAL is the program for the coming meeting of the American Medical Association in Los Angeles. Months of planning have been put into this meeting, with the hope that December 4 to 7 will be a memorable occasion for the physicians who attend. The scientific program, the scientific and technical exhibits, the scenic beauty of California, and the importance of many of the problems that will be discussed by the House of Delegates should be tempting for those who wish to combine pleasure with medical education and an interest in medical organization activities. Information on registration, meeting places, local committees, the composition of the House of Delegates, and the officers of the American Medical Association appears on page 953 and the pages following. The scientific program and the scientific exhibits alone should satisfy the practitioner seeking recent information on the newer medical procedures. Other medical problems will be reviewed, always with the practitioner in mind and with emphasis on the needs of the general practitioner. Worthy of special attention again will be the color television program, through which a variety of interesting medical topics will be offered. Such visual techniques have opened new fields of training for those otherwise unable to see or participate in the demonstrations.

While it is only a few weeks until the session in Los Angeles, there is still time to make last minute arrangements and to prepare for a visit that will long be remembered. Transportation should present no problem, and hotel accommodations can be arranged through the chairman of the Subcommittee on Hotels, 1151 South Broadway, Los Angeles 15, Calif. An Application form for hotel space may be found in the advertising pages of THE JOURNAL (page 36). The scientific meetings, the scientific exhibits, and the technical exhibits will be in Shrine Convention Hall, which is located at 700 West 32nd Street, an address that we hope will become familiar to more members and guests than ever before seen at an interim meeting of the American Medical Association.

DETECTION OF HEART DISEASE IN CHEST SURVEY

Selzer and his associates [1] attempted to evaluate the photofluorographic tuberculosis mass survey as a means of detecting unknown heart disease. The study was conducted for a period of 31 months by the Heart Division of the San Francisco Tuberculosis Association. Approximately 155,000 minifilms (35 mm.) were taken in search of tuberculosis. The tuberculosis survey film readers were instructed to report, in addition to tuberculosis, any suspected abnormality of the cardiovascular shadow. Abnormal-appearing cardiac shadows were considered to be present in 1,356 (0.87%). Eight hundred forty-six persons with abnormal-appearing shadows were reexamined fluoroscopically, and the presence of abnormal shadows was confirmed in only 514, or 60.7%. It appeared, therefore, that fluoroscopy is of value in eliminating many false-positive minifilms. One hundred ninety-three of the patients with abnormal observations confirmed by fluoroscopic examination were referred to physicians. Twenty-eight of these patients had no evidence of heart disease. Evidence of clinical heart disease was found in 165 (85.5%). In 89 of these patients, or 46.1%, heart disease was previously unknown. It appears, then, that in a survey of 155,021 minifilms, only 89 cases (0.059%) of previously unknown heart disease were discovered. The authors feel that the percentage of cases of previously unknown heart disease discovered by the minifilm technique in routine chest surveys is too small for a survey of this magnitude. A number of factors are responsible for the relatively small yield. Among these are the limitations of roentgenography in the detection of cardiac disease in general, and of the minifilm technique in particular. It should also be emphasized that certain types of cardiac disease are not detectable by radiography. Another important factor is the inaccuracy of the films of the type employed in the estimation of heart size. The study suggests that a cardiac case-finding survey as a by-product of a tuberculosis survey is not justified, particularly without the follow-up aid of fluoroscopy.

VITAMINS AND BLOOD REGENERATION

Until 25 years ago a diagnosis of pernicious anemia meant almost certain death. Then Minot and Murphy [1] made the brilliant discovery that liver, eaten daily in large amounts, benefited patients with pernicious anemia and maintained their blood values at satisfactory levels if they continued on this regimen. The next milestone in the treatment of pernicious anemia was the preparation of highly refined liver extracts, which were more efficacious as therapeutic agents and more acceptable to the patient than whole liver. Many investigators contributed toward the working out of a satisfactory method of making such extracts; it was learned that most of the folic acid normally present in the liver was discarded in the process, with the result that the highly refined extracts

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1. Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A. **87**: 470 (Aug. 14) 1926.

which were potent in treating pernicious anemia were almost completely devoid of folic acid.

The chemical era in the treatment of certain types of macrocytic anemia followed the synthesis of folic acid [2] and was initiated when Spies, Vilter, Koch, and Caldwell [3] published results showing that a single synthetic compound of known molecular structure (folic acid) was effective in the treatment of patients with certain types of macrocytic anemia. These observations were promptly confirmed and extended in various parts of the United States.[4]

In the period between the acceptance of liver as a therapeutic agent and the acceptance of folic acid as a therapeutic agent, great strides in studying the pathogenesis of anemia were made by investigators all over the world. Much of the information concerning the anemias of pregnancy came from the investigations of Wills [5] with patients in India and from her experiments with monkeys; information concerning nutritional macrocytic anemia came from observations of Spies and Chinn [6] and Moore, Vilter, Minnich, and Spies [7]; and further knowledge of the pathogenesis of pernicious anemia came directly from observations of Castle and associates,[8] Bethell and associates,[9] and Moore and associates.[10]

Soon after folic acid was found to be effective in the treatment of certain of the macrocytic anemias, Spies and his group in Alabama set out on the difficult and tedious task of finding other chemical compounds that might promote hemopoietic activity in these diseases. Since macrocytic anemias occur throughout the world and since certain types are found more frequently in some areas than in others, it was decided that these diseases should be studied simultaneously in the temperate zones and in the tropics. This led to the development of centers in Birmingham, Ala.; Havana, Cuba; and San Juan, Puerto Rico, where the same criteria for selecting patients could be used and the same chemical compounds could be tested under the same controlled conditions. This cooperative project of Northwestern University, the University of Havana, and Dr. Ramon Suarez and associates in San Juan, Puerto Rico, is still being carried on and is still proving worth while. By comparing clinical experiences in the northern and southern parts of the United States, in Cuba, and in Puerto Rico, this group has shed light on certain complicated relationships among pernicious anemia, nutritional macrocytic anemia, tropical sprue, and the megaloblastic anemias of pregnancy and infancy. The pathogenesis of these conditions, however, is not yet fully understood.

The use of folic acid in the treatment of certain anemias was followed within a relatively short period of time by the demonstration that still other distinct chemical molecules produce blood regeneration by their specific effect on the megaloblasts of the bone marrow: thymine,[11] the vitamin B_{12} family [12] (detailed chemical structure not fully known), and folinic acid [13] (similar or identical substances are termed citrovorum factor or leucovorin). It is surprising that compounds so different in chemical structure all have the ability to promote blood regeneration. Despite the fact that these compounds are specific, safe, and effective, there probably are other precious chemical substances in liver and yeast capable of producing blood regeneration which as yet have not been isolated and synthesized.

The administration of any one of these chemical compounds to properly selected patients with macrocytic anemia in relapse, even while they are eating diets devoid of meat or meat products (which in themselves may tend to promote blood regeneration in some instances), produces a striking clinical and hemopoietic response. The clinical response is characterized by a marked increase in strength, vigor, and appetite; the diarrhea of tropical sprue and of nutritional macrocytic anemia tends to be corrected by the administration of either folic acid or vitamin B_{12}. The hemopoietic response is characterized by an increase in the reticulocytes in the bone marrow, followed by a reticulocyte increase in the peripheral blood and a subsequent rise in cells and hemoglobin. Certain of these substances, however, have specific functions which the others do not have. For example, the vitamin B_{12} family is specific in preventing the acute degeneration of the spinal cord associated with pernicious anemia; folic acid, thymine, and leucovorin are specific in relieving the megaloblastic anemias of pregnancy and infancy. In a majority of cases vitamin B_{12} does not relieve these anemias of pregnancy and infancy; and folic acid, thymine, and leucovorin neither protect against nor cause the neural degeneration associated with pernicious anemia.

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Spies, Stone, Garcia Lopez, Lopez Toca, and Reboredo [14] recently showed again that combined degeneration of the spinal cord does not develop in persons with pernicious anemia receiving folic acid provided adequate amounts of vitamin B_{12} are administered in the form of liver extract, B_{12} concentrate, or B_{12} crystals. Some patients with pernicious anemia can absorb vitamin B_{12} orally; others absorb it poorly or not at all. Students in this field recommend, therefore, that all patients with true pernicious anemia receive parenteral injections of vitamin B_{12} or substances, such as refined liver extract, that contain vitamin B_{12}.

HISTAMINE ANALOG

Among the many pharmacologic effects of histamine, its ability to stimulate gastric secretion has found widest clinical application. The routine subcutaneous administration of this drug as a test for achlorhydria, however, has certain disadvantages. In ordinary doses it frequently produces flushing, palpitation, headache, and even vomiting. In larger doses or in hypersensitive persons, shock may supervene. It is therefore of interest to note that a new analog of histamine has been discovered that is reported to stimulate gastric secretion without producing any of these unpleasant side effects.

This compound, 3-(β ethylamine) pyrazole, an isomer of histamine in which the heterocyclic ring has a pyrazole instead of an imidazole configuration, was first synthesized and studied by Lee and Jones,[1] who observed that, unlike histamine, it did not cause contraction of the isolated guinea pig ileum or lower the blood pressure of the anesthetized cat. Subsequently, Rosiere and Grossman [2] demonstrated that this was the only compound of a series of similar compounds that had the property of stimulating gastric acid secretion without producing any of the other pharmacologic actions of histamine. This dissociation of functions in a histamine-like compound is not surprising, since there are apparently fundamental differences between the two types of action of histamine. Its effect on gastric secretion is not counteracted by the antihistaminic drugs, and the xanthine alkaloids that inhibit the general actions of histamine actually potentiate its gastric secretory action.

The usefulness of the new compound and its lack of side effects have been demonstrated in both dog and man. In dogs it acts as a powerful stimulator of gastric acid secretion when administered as the hydrochloride orally, subcutaneously, intramuscularly, or intravenously. The dose required is considerably larger than the pharmacologically equivalent dose of histamine diphosphate, but the maximum secretory rate attainable with the two drugs is the same, as is the pepsin concentration of the juices secreted. The blood-pressure-reducing potency of the new compound, on the other hand, is only 1/700 that of histamine. In 20 human subjects doses of 10 to 50 mg. were injected subcutaneously and intramuscularly, without any of the characteristic side effects of histamine. The 50 mg. dose stimulated a greater output of hydrochloric acid than did 0.01 mg. of histamine diphosphate per kilogram of body weight. When the dose was raised to 100 mg., side effects similar to those produced by histamine began to appear. In the proper dosage this compound may prove to be useful in the routine testing of gastric function.

EXPERIMENTAL BULBAR POLIOMYELITIS

It was estimated by Aycock [1] that 70% of all cases of poliomyelitis occurring within 30 days after tonsillectomy are of the bulbar type. Attempts to reproduce post-tonsillectomy bulbar paralysis in monkeys, however, have nearly always failed, paralysis when produced usually being of the spinal type.[2]

Faber [3] and associates of Standard University call attention to a possible error in the technic of these experiments. Exposure of the throat to the virus was invariably made after, rather than before, the operation. At this time the central cut ends of the local nerves were presumably sealed off with blood. They therefore repeated the experiments on monkeys, placing the virus on the pharyngeal surface before tonsillectomy.

The tests were made on cynomolgus monkeys, previously prepared by division of the olfactory tracts so as to preclude entry of the infection through the olfactory nerves. A 17% suspension of the Wis '45 strain of poliomyelitis virus was swabbed on the oropharyngeal surfaces. The tonsils were then removed by enucleation with curved scissors. Control inoculations were made with the same virus, but without tonsillectomy.

Bulbar paralysis developed in all seven monkeys subjected to tonsillectomy after an incubation period of 7 to 10 days. Three of these also showed spinal paralysis. Bulbar paralysis developed in only one of the seven controls, none of which were subjected to tonsillectomy, while spinal paralysis developed in four.

The possibility of prevention by local antisepsis was also tested. Six cynomolgus monkeys were subjected to the same procedure as in the first series, except that 2% tincture of iodine was applied to the throat one-half minute after the throat was swabbed with the virus and one minute before tonsillectomy. All of these treated animals remained well. Although preoperative antisepsis appears to be harmless, Faber believes that no assurance of its preventive value in human cases can be drawn from the experiments.

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ORGANIZATION SECTION

RESOLUTION TO BE PRESENTED TO HOUSE OF DELEGATES

The Secretary of the Association has received the following resolution, which is to be presented by delegates of the Ohio State Medical Association at the Los Angeles Clinical Session in December:

WHEREAS, It has been customary for the House of Delegates to hold its interim session during the Clinical Session of the American Medical Association; and

WHEREAS, This has required excessive travel on the part of many delegates who seldom have time to attend the Clinical Sessions; and

WHEREAS, This requires travel on the part of many members of the staff of the Chicago office of the American Medical Association to some distant city and the shipment of many records and supplies from Chicago, entailing considerable expense to the Association; therefore be it

Resolved, That interim sessions of the House of Delegates be held in Chicago in December each year, and that this change become effective in 1953.

THE SCIENTIFIC EXHIBIT—CHICAGO SESSION

Application blanks are now available for space in the Scientific Exhibit at the Chicago Session, June 9 to 13, 1952. The Scientific Exhibit will be held on Navy Pier, where most of the other activities of the Session will be centered. Each Section of the Scientific Assembly has appointed a representative to the Scientific Exhibit to assist and advise in the procurement of applications, and exhibits will be grouped by Sections as far as possible. Applications will close on Jan. 15, 1952, but they should be submitted as far in advance of that date as possible.

The Committee on Scientific Exhibit is composed of three members of the Board of Trustees: Dr. E. J. McCormick, Toledo, Ohio, Chairman; Dr. L. W. Larson, Bismarck, N. D., and Dr. Thomas P. Murdock, Meriden, Conn.

Applications should be submitted to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago 10.

THIRD NATIONAL CONFERENCE ON PHYSICIANS AND SCHOOLS

Sponsored by the American Medical Association under the auspices of its Bureau of Health Education, the Third National Conference on Physicians and Schools will be held at the Moraine Hotel, Highland Park, Ill., Nov. 6-8, 1951. Conferences on this subject have been conducted biennially since 1947.

All state departments of health and education, as well as state medical associations and societies, have been invited to send representatives. Over 40 outstanding leaders in medicine, education, and public health will serve as consultants and discussion leaders. Delegates from many national health and education agencies will also attend.

The purposes of the Conference have been defined as follows:

1. To evaluate progress made in the development of school health services since the 1949 Conference on Physicians and Schools.

2. To promulgate policies that will promote the kind of health services that will serve the best interests of growing children.

3. To discover methods of working together at state and local levels so that joint action by the public health, education and medical professions will lead to the development of effective health services for school children.

4. To explore both old and new technics for the administration of school health services and to evaluate their effectiveness in view of the recognized responsibilities of each family for the health of its children.

"Health Services for School Children" will be the general Conference theme, with division of participants into small discussion groups for consideration of the following subtopics:

Group I	Health Appraisal of School Children
Group II	Emergency Services for Accidents and Sudden Illness
Group III	Health Services in Physical Education Including Athletics
Group IV	Follow-Up to Meet Child Health Needs
Group V	New Concepts in Control of Communicable Disease

These topics will be considered in the light of good medical and educational practice and the professional relationships among educators, physicians in private practice, public health physicians, and others concerned with school health problems. How these people can best work together in the interests of school children will be emphasized.

Through these conferences the Association plays an appropriate role in the development of principles and policies for school health that honor the health obligations of parents, preserve the administrative pattern of the school, recognize the responsibilities of public health, and respect the framework of the private practice of medicine.

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JOURNAL OF THE STUDENT AMERICAN MEDICAL ASSOCIATION

In January, 26,000 medical students and 7,000 interns of the United States will receive their first copy of a new publication, the *Journal of the Student American Medical Association*.

The *Student Journal* will be a 72-page publication with 50% advertising copy and 50% editorial material. It will be published nine months a year, skipping July, August, and September.

The editorial sections of the new *Student Journal* will include scientific articles, socioeconomic articles, and special features of interest to medical students and interns. Any medical student, resident, intern, medical school faculty member, or practicing physician may write original articles or features for the *Student Journal*.

Special features will include a newsletter designed to keep the readers up-to-date on new pharmaceuticals, new instruments or equipment, new facilities, and other current items. There will also be a pictorial feature on a medical school, a question-and-answer page, a diagnostic problem, book reviews, and internship and residency information.

Practicing physicians are encouraged to write articles of interest and information to readers of the new publication, with particular reference to actual experiences in the practice of medicine.

The *Student Journal* is the official publication of the Student American Medical Association, which now has active chapters in more than half of the nation's 79 medical schools.

Material for the *Student Journal* should be addressed to Walter H. Kemp, managing editor, Student American Medical Association, 535 North Dearborn St., Chicago 10.

MEDICAL NEWS

CALIFORNIA

Lectures on Marriage.—Two discussions by Dr. Judd Marmor, Beverly Hills, will be held Nov. 2 and 9 under the sponsorship of the Southern California Society for Mental Hygiene. "Men and Women in Conflict" is the title of the first discussion. The second, "Fact and Fantasy in Marriage," will propose ways of making sounder marriages. Both discussions will be held at 8:15 p. m. in the Institute of Aeronautical Sciences Auditorium, 7660 Beverly Blvd., Los Angeles. Dr. Marmor is lecturer at the Institute of Psychoanalytic Medicine of Southern California, visiting professor of social welfare of the University of California at Los Angeles, and a staff member of Cedars of Lebanon Hospital. Tickets for the series will be $3 per couple to society members and $4 to nonmembers.

ILLINOIS

Tuberculosis Death Rate.—The tuberculosis death rate in Illinois has been reduced by more than four-fifths since 1900, according to the state department of public health. At the beginning of the century 140 out of every 100,000 persons died of tuberculosis in the state; in 1950 the death rate had been reduced to 25.4 per 100,000. Despite its decline, tuberculosis is nevertheless the eighth ranking cause of death in Illinois. Of the 2,215 deaths reported as a result of tuberculosis in Illinois last year, 1,512, more than two-thirds, were in the 25 to 64 age group. In Chicago the tuberculosis death rate is more than twice that of downstate Illinois. Last year Chicago reported 1,447 tuberculosis deaths, or about 65% of the state's total. This gave that city a rate of nearly 40 per 100,000 as against a rate of about 18 for the remainder of the state.

Chicago

Cancer Lecture Series.—The 1951 Cancer Lecture Series of the Northwestern University Medical School is being held at Thorne Hall on Wednesdays from 5 to 6 p. m. through Dec. 12. Remaining lectures in the series are as follows:

Nov. 7, Cancer of the Breast, Cushman D. Haagensen, New York.
Nov. 14, Metastases, Morton McCutcheon, Philadelphia.
Nov. 21, Newer Concepts of Cancer Therapy, Danely P. Slaughter, Chicago.
Nov. 28, Multiple Myeloma, Steven O. Schwartz, Chicago.
Dec. 5, Radiotherapy Aspects in Cancer Management, Ivan H. Smith, London, Ont., Canada.
Dec. 12, Estrogens and Cancer, Ludwig A. Emge, San Francisco.

Forum on Chicago's Narcotics Problem.—This forum will be presented by the Woman's Auxiliary to the Chicago Medical Society Nov. 13 in the Grand Ballroom of the Sheraton Hotel at 12:30 p. m. Speakers will be Mr. R. W. Artis, supervisor of No. 9 District of the Federal Bureau of Narcotics, and Judge Gibson E. Gorman, Judge of the Municipal Narcotics Court. A bibliography on narcotics compiled by the Council on Medical Service of the American Medical Association will be distributed to each guest. Invited guests will include leaders of woman's clubs, civic groups, religious organizations, and educational and labor groups.

INDIANA

Personals.—Recently Dr. Harold N. Johantgen, former resident in medicine and cardiology, assumed duties as director of the newly established student-employee health service on the Indiana University Medical Center campus in Indianapolis.——Dr. Orville T. Bailey from Harvard University Medical School, Boston, has been named professor of neuropathology at the Indiana University School of Medicine, Indianapolis.——Dr. W. Foster Montgomery, member of the Medical Center staff, Indianapolis, was chairman of the American College of Surgeons delegation to the eighth Inter-American Congress of Surgery held Oct. 1-6 in Buenos Aires.

Mason Cancer Research Fund.—Establishment in the Indiana University Foundation of a special cancer research fund as a memorial to the late Dr. Lester R. Mason of Muncie was announced recently by Howard S. Wilcox, executive director. Friends of Dr. Mason, who received his medical degree from the university in 1925, already have made several gifts in his memory to the foundation.

MISSOURI

Dr. DeBoer Goes to North Dakota.—Benjamin DeBoer, Ph.D., associate professor of pharmacology at the St. Louis University School of Medicine, has accepted an appointment as professor of pharmacology at the University of North Dakota at Vermillion, effective in September. Dr. DeBoer, who joined the faculty of St. Louis University as an assistant professor in 1946, was made associate professor in 1950.

General Practitioners Postgraduate Program.—The Missouri Academy of General Practice has listed the following postgraduate programs to be held in the state. Under the auspices of the academy and with the cooperation of the St. Louis University School of Medicine, postgraduate meetings have been scheduled for Sept. 25, Oct. 30, Nov. 27, Dec. 18, and Jan. 29 at the State Mental Hospital, Farmington, beginning at 8 p. m. St. Louis University is sponsoring the meetings to be held in the Dunklin County Memorial Hospital at Kennett, on the above dates, beginning 8 p. m., and Louisiana, Mo., will be host to talks by speakers from Washington University School of Medicine, St. Louis. On the same days the university will present talks at the Hotel Hoxey in Mexico, at 8 p. m., and at dinner meetings, a series of talks will be conducted by the faculty of the University of Missouri School of Medicine at Jefferson Hotel in Macon. The university will furnish the speakers on the same dates at Phelps County Memorial Hospital in Rolla, at 8 p. m.

NEW JERSEY

Doctors Donate Train Wreck Fees to Hospital Fund.—A resolution passed unanimously by the medical staff of the Perth Amboy General Hospital following the Feb. 6 train wreck at Woodbridge has added $32,509 to the hospital's building fund. A check, representing payment by the Pennsylvania Railroad to doctors for service rendered to persons injured in the wreck, was received Sept. 27. Ninety-four persons were admitted to the hospital the night of the wreck, many with injuries requiring extensive operations and long periods of hospitalization. To care for these patients, all except emergency operations were cancelled for persons in this area for days, and the wreck patients went to the operating rooms according to precise schedules worked out by the medical staff. Charles E. Gregory, president of the hospital's board of governors, termed the doctors' action "a most magnanimous gesture which reflects great credit upon their profession."

NEW YORK

Personal.—Dr. Morton L. Levin, assistant commissioner, Division of Medicine Services, State Department of Health, has been appointed to a Committee on Morbidity Studies recently established by the U. S. Public Health Service.

Postgraduate Instruction.—Dr. Guy F. Robbins, New York, will address the Cayuga County Medical Society at the Hotel Osbrone in Auburn Nov. 15 at 8:30 p. m. on "What Can the General Practitioner Do About Lowering Cancer Mortality?" The Geneva Academy of Medicine, meeting at 8:30 p. m. Nov. 19 at the Belhurst in Geneva, will hear Dr. Alexander Brunschwig, New York, speak on "Radical Surgery in Advanced Cancer."

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

Monthly Meetings on Infant Mortality.—In an attempt to lower the neonatal death rate and the incidence of stillbirth in New York County, the Special Committee on Infant Mortality of the Medical Society of the County of New York is continuing its monthly meetings open to all members of the medical and nursing professions and to medical students. These meetings will be held in room 440 of the Academy of Medicine building, 2 E. 103rd St., on the first Wednesday of every month at 8:30 p. m., the first meeting to be on Nov. 7. Following presentation of a paper by an authority in the field, time will be allowed for questions from the floor. Speakers are as follows:

Nov. 7, Helen M. Wallace, New York, A Plan for Lowering Neonatal Mortality.
Dec. 5, James B. Arey, Philadelphia, Pulmonary Changes in Newborn Infants.
Jan. 2, Samuel A. Cosgrove, Jersey City, N. J., Toxemias of Pregnancy as a Cause of Neonatal Mortality.
Feb. 6, Louis K. Diamond, Boston, Erythroblastosis Fetalis: Newer Concepts.
March 5, William E. Studdiford, New York, Hazards to the Infant Born by Caesarean Section.
April 2, Ethel C. Dunham, Washington, D. C., The Premature Infant.

New York City

Personals.—Dr. Margaret W. Barnard, director of district health administration of the department of health since 1934, has retired to accept the post of associate professor of public health practice at Columbia University School of Public Health.

Tuberculosis Conference.—A symposium on Acute Infections of the Lung will be given by the Tuberculosis Sanatorium Conference of Metropolitan New York at its clinical session, 8:15 p. m. Nov. 14 in the Cornell University Medical College Amphitheatre. The speakers will be Drs. Yale Kneeland Jr. and Ralph R. Tompsett.

New Home Care Program.—The City of New York Department of Health is now operating a new home care medical program to serve mothers whose infants are delivered at home by ambulance physicians. Every year there are about 1,300 infants delivered by ambulance physicians in homes. In the majority of these cases the mothers refuse to be hospitalized for delivery and many do not have medical supervision. One physician has been assigned to each borough to carry on the department's program of giving mothers and newborn infants such care as they require. The ambulance physician who makes the delivery will notify one of the three visiting nurse associations—the Visiting Nurse Service of New York, the Brooklyn Visiting Nurse Association, or the Staten Island Visiting Nurse Association—which will send a visiting nurse to the home within 24 hours. The nurse will provide home nursing supervision and notify the department of health so a physician can be sent to the home. If there are complications, the department will make every effort to persuade the family to send the mother and child to a hospital.

OHIO

Narcotic Violation.—Dr. Stephan Donath, Toledo, pleaded *nolo contendere* to a charge of violation of the federal narcotic law, and on Sept. 13 was fined $750 and costs.

Mahoning County Observes Diabetes Week.—The Mahoning County Medical Society and the Mahoning Academy of General Practice will hear Dr. Joseph T. Beardwood, Philadelphia, speak Nov. 13 at 8:30 p. m. on "Newer Aspects of Diabetes Mellitus," as part of the observation of Diabetes Week, Nov. 11-17, held in the county. Urine tests will be done free of charge at all physicians' offices and at laboratories of all hospitals. Radio talks and talks to local lay organizations on diabetes will be given.

OREGON

State Medical Election.—At the annual meeting of the Oregon State Medical Society Oct. 10-13 in Portland, Dr. Blair Holcomb, Portland, was installed as president. Other officers for the year include Dr. John D. Rankin, Coquille, president-elect; Dr. Robert F. Miller, Portland, secretary (reelected); Dr. Robert W. Kullberg, Portland, treasurer (reelected); Dr. William W. Baum, Salem, delegate to the American Medical Association (two-year term ending 1953), and Dr. Werner E. Zeller, Portland, alternate delegate (two-year term ending 1953).

SOUTH DAKOTA

Mental Health Clinic at Sioux Falls.—A community mental health outpatient clinic providing for the treatment of patients with personality disorders, counciling services to organized health and welfare agencies, education for mental health, and pre- and post-hospitalization care for mental hospital patients, is to open in Sioux Falls about Jan. 1. Treatment will be provided for anyone desiring care irrespective of ability to pay. It is being made possible by an organization made up of representatives of city, county, and state organizations. Finances for the center will come from the state department of health, the City of Sioux Falls, the Community Chest, and the board of education.

TENNESSEE

University Appointments.—Arne V. Hunninen, D.Sc., associate professor of biology at Mount Union College, Alliance, Ohio, has joined the staff of the University of Tennessee Medical Units as assistant professor of preventive medicine, replacing Raymond Laird, Sc.D., resigned. Dr. Hunninen will teach parasitology and biostatistics. From 1936 to 1943 he was professor of biology at the Oklahoma City University. Dr. Nils Lofgren, on a year's leave of absence from the University of Stockholm, Sweden, has been appointed instructor in chemistry. Frederic C. Chang, Ph.D., former chairman of the department of chemistry at Lingnam University, Canton, China, has joined the staff of the University of Tennessee Medical Units, Memphis, as a lecturer in chemistry and research associate in pathology.

TEXAS

Dr. Aagaard Named Dean.—Dr. George N. Aagaard, director of postgraduate medical education at the University of Minnesota, Minneapolis, has been appointed dean of Southwestern Medical School of the University of Texas, Dallas, effective Jan. 1. He succeeds Dr. Carl A. Moyer, who resigned Oct. 10. In the interim Dr. Atticus J. Gill, associate professor of pathology at the medical school, will be acting dean.

Dallas Health Museum.—On Sept. 17 the Dallas Health Museum observed its fifth anniversary and announced that it had grown from an idea and $20 in cash to 200 health exhibits. Records show that almost a million visitors have observed the exhibits, which are housed in the Texas State Fair Grounds. In observance of the birthday, the newly organized Health Museum Guild, a woman's auxiliary to the museum, presented a program on which a panel of experts discussed the use of narcotics among teen-age persons. Mrs. Marguerite Hays is museum director.

Visiting Professors.—Walter J. Meek, Ph.D., emeritus professor of physiology at the University of Wisconsin, Madison, will be guest lecturer in physiology at the University of Texas Medical Branch, Galveston, during November. Professor Meek will lecture on cardiac action and on the effects of various drugs on the heart. Professor H. Munro Fox of the University of London, president of the International Union of Biological Sciences, on Nov. 8 will give an illustrated lecture on "Red, Blue, and Green Bloods."

WEST VIRGINIA

State Heart Association Meeting.—Dr. Howard R. Sauder, Wheeling, was elected president of the West Virginia Heart Association at the annual meeting held in Morgantown Oct. 5. Dr. W. Fred Richmond, Beckley, was named president-elect, Dr. Clark K. Sleeth, Morgantown, vice-president, and Dr. William E. Bray Jr. of Huntington, secretary. Mr. R. E. Plott, Charleston, was reelected treasurer. At the afternoon session meeting Dr. Louis N. Katz, Chicago, president of the American Heart Association, spoke on "The Dynamics of Pulmonary Embolism," and Dr. Robert Taylor, Cleveland, discussed "Electrolyte and Fluid Balance." The meeting was well attended. All classes in the medical school were dismissed so that students might attend the afternoon session.

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Van Ophuijsen Memorial.—The *Journal of Clinical and Experimental Psychopathology* issued its first Van Ophuijsen volume as a January-March number. It contains six papers and a discussion on "Endocrinologic Orientation to Psychiatric Disorders," and four other scientific articles. Johan H. W. van Ophuijsen taught at the Psychoanalytic Institute in New York from 1938 to 1948 and at the Long Island College of Medicine from 1949 to 1950, and in 1950 was named director of the Creedmoor Institute for Psychobiologic Studies at Creedmoor State Hospital, New York. He had been editor of the *Journal of Clinical and Experimental Psychopathology*. He died May 31, 1950.

Annual Cerebral Palsy Meeting.—The American Academy for Cerebral Palsy will hold its annual meeting at the Copley Plaza Hotel in Boston, Nov. 16-17, under the presidency of Dr. Bronson Crothers, Boston. The Friday afternoon session, which is open to all physicians, will include the following speakers:

Bronson Crothers, Boston, The Cerebral Palsy Problem in 1951.
Frances A. Hellebrandt, Richmond, Va., Physiology of Motor Learning as Applied to Cerebral Palsy.
Morton Marks, New York, Studies of Gait Patterns of the Hemiplegic Patient.
William A. Cooper, New York, Surgical Methods for Functional Improvement of the Hand in Spastic Paralysis.
Franc D. Ingraham, Boston, Diastematomyelia.
Wilder G. Penfield, Montreal, Canada, Paradoxical Benefit of Cortical Ablation for Selected Hemiplegics.

Health Council Aid Kit.—To help communities start new health councils, the National Health Council has prepared a new "loan kit" entitled "Aids to Community Health Planning." The kit may be borrowed for a month at a time, with privilege of renewal, or purchased at $2.50. It is divided into six sections. The material covers programs, activities, structure, and financing of health councils. It includes sample constitutions and bylaws both for rural and urban councils and for health divisions of welfare councils. One entire section is devoted to the step-by-step formation of a council and mobilization of public support. Specific programs of active councils are described. For loan or purchase write to the National Health Council, 1790 Broadway, New York 19.

Nobel Prize Awarded for Yellow Fever Vaccine.—Dr. Max Theiler, New York, is the 1951 recipient of the Nobel prize in medicine, which will be presented to him by King Gustav Adolf of Sweden in Stockholm Dec. 10. The award carries a prize of $32,357. Dr. Theiler was chosen for developing the first effective vaccines against yellow fever. He has been on the staff of the International Health Division of the Rockefeller Foundation for 21 years. The fight against this disease cost the lives of six Rockefeller Institute or Foundation men. A team of Rockefeller Institute men isolated the virus which causes the disease while they were working in Africa in 1928. Dr. Theiler, who developed the vaccine in the laboratory in New York, gives credit to his two associates, the late Dr. W. Lloyd and Dr. Hugh Smith, both of the Rockefeller Institute.

Diabetes Week, 1951.—Diabetes Week is scheduled for Nov. 11-17. Over 500 county and 29 state medical societies are already participating and many more have expressed interest in establishing committees for this purpose. It is expected that nearly 5 million persons will be screened for glycosuria in the communities where they live or work during the campaign. Although all types of persons will be tested, this year emphasis is being placed on the overweight, especially those over 40. Great effort will also be made to test on a large scale in industrial plants, and especially in defense industry, where loss of man-hours through illness should be kept to a minimum at this time of national emergency. Local medical societies will take the initiative in organizing all useful agencies and groups in their own areas and will conduct the week's program with the aid of their cooperating groups. There will be no public fund-raising, and the expenses of the campaign will be defrayed by voluntary donations. The American Diabetes Association, 11 W. 47th Street, New York 18, distributed about 1½ million reagents for testing last year.

Annual Meeting on Arteriosclerosis.—The American Society for the Study of Arteriosclerosis will hold its annual meeting in Chicago Nov. 4-5 under the presidency of Dr. E. Cowles Andrus, Baltimore. Among the 31 papers to be read are the following:

Charles A. Woerner, Louisville, Ky., Molecular Size and Particle Size as Factors in the Deposition of Lipids.
Joseph H. Bragdon, Bethesda, Md., Transfusion Transfer of Experimental Atherosclerosis.
Irving Leinwand, New York, Serum Lipid and Protein Fractions: V. Effect of Hyperlipemia and Hypercholesterolemia on the Electrophoretic Pattern of Proteins.
Dean F. Davies, St. Louis, A New Statistical Approach to Constitutional Factors in Hypertension and Coronary Thrombosis.
Rudolf Altschul, Saskatoon, Saskatchewan, Canada, Nephrotoxic and Angiotoxic Substances.
Joseph B. Wolffe, Philadelphia, Methonium Compounds in the Treatment of Essential Benign and Malignant Hypertension Before and After Sympathectomy.
Otakar J. Poltak, Quincy, Mass., Morphologic Similarities and Dissimilarities Between Human Atherosclerosis and Experimental Atherosclerosis in the Rabbit.

The annual dinner will be held at 7:30 p. m.

Prevalence of Poliomyelitis.—According to the National Office of Vital Statistics, the following number of reported cases of poliomyelitis occurred in the United States in the weeks ended as indicated:

Area	Oct. 20, 1951	Oct. 13, 1950	Oct. 21, 1950
New England States			
Maine	..	1	3
New Hampshire	1	..	..
Vermont	..	..	3
Massachusetts	3	3	23
Rhode Island	1	1	1
Connecticut	11	9	21
Middle Atlantic States			
New York	82	54	235
New Jersey	14	16	47
Pennsylvania	31	34	65
East North Central States			
Ohio	48	66	78
Indiana	14	12	35
Illinois	54	65	116
Michigan	64	75	122
Wisconsin	51	64	67
West North Central States			
Minnesota	27	30	26
Iowa	10	8	59
Missouri	40	16	23
North Dakota	2	4	1
South Dakota	4	3	1
Nebraska	19	17	21
Kansas	50	24	34
South Atlantic States			
Delaware	..	..	4
Maryland	7	5	52
District of Columbia	3	1	..
Virginia	9	14	48
West Virginia	11	12	25
North Carolina	17	7	32
South Carolina	6	2	12
Georgia	18	10	19
Florida	5	6	11
East South Central States			
Kentucky	28	10	34
Tennessee	36	28	30
Alabama	8	14	2
Mississippi	25	42	4
West South Central States			
Arkansas	10	16	10
Louisiana	23	14	14 *
Oklahoma	13	29	18
Texas	51	56	87
Mountain States			
Montana	1	5	..
Idaho	8	13	6
Wyoming	4	15	1
Colorado	17	30	4
New Mexico	8	5	9
Arizona	6	11	10
Utah	23	16	8
Nevada	2	1	..
Pacific States			
Washington	20	10	25
Oregon	22	17	30
California	155	125	72
Territories and Possessions			
Alaska	..	..	5
Hawaii	1	..	2
United States	1,063	1,016	1,541

* Not included in totals.

CORRECTION

Kings County Medical Society, Brooklyn.—In the paper on "Premature Infant Mortality" in THE JOURNAL, July 7, 1951, page 886, footnotes number 8 and number 12 refer to a study by Dr. C. A. Gordon, Chairman of the Maternal Welfare Committee, and gives the origin as King County Medical Society, Seattle, whereas, it should be the Kings County Medical Society, Brooklyn, N. Y.

MEETINGS

AMERICAN MEDICAL ASSOCIATION CLINICAL SESSION, Los Angeles, Dec. 4-7. Dr. George F. Lull. 535 N. Dearborn St., Chicago 10, Secretary.

AMERICAN ACADEMY OF TROPICAL MEDICINE, Congress Hotel, Chicago, Nov. 14-17. Dr. Clay G. Huff, Navy Medical Research Institute, Bethesda 14, Md., Secretary.

AMERICAN ASSOCIATION OF MEDICAL CLINICS, Mayfair Hotel, Los Angeles, Dec. 3-4. Dr. Edwin P. Jordan, Box 114, Charlottesville, Va., Executive Director.

AMERICAN CLINICAL AND CLIMATOLOGICAL ASSOCIATION, Skytop, Pa., Nov. 5-7. Dr. Marshall N. Fulton, 124 Waterman St., Providence, R. I., Secretary.

AMERICAN COLLEGE OF SURGEONS, Fairmont Hotel, San Francisco, Nov. 5-9. Dr. Michael L. Mason, 40 E. Erie St., Chicago 11, Secretary.

AMERCAN SOCIETY FOR THE STUDY OF ARTERIOSCLEROSIS, Chicago, Nov. 4-5. Dr. O. J. Pollak, Quincy City Hospital, Quincy 69, Mass., Secretary.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS, Washington, D. C., Nov. 5-8. Dr. J. Earl Remlinger Jr., 188 W. Randolph St., Room 909, Chicago 1, Secretary.

AMERICAN SOCIETY OF TROPICAL MEDICINE, Congress Hotel, Chicago, Nov. 15-17. Dr. Quentin M. Geiman, 25 Shattuck St., Boston 15, Secretary.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASES, Hotel Roosevelt, New York, Dec. 14-15. Dr. Clarence C. Hare, 170 Maple Ave., White Plains, N. Y., Secretary.

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS, Washington, D. C., Nov. 26-30. Dr. John D. Porterfield, 306 Ohio Depts. Bldg., Columbus 15, Ohio, Secretary.

CALIFORNIA ACADEMY OF GENERAL PRACTICE, Coronado, Nov. 5-7. Mr. William W. Rogers, 450 Mission St., San Francisco, Executive Secretary.

NATIONAL CONFERENCE ON PHYSICIANS AND SCHOOLS, Moraine Hotel, Highland Park, Ill., Nov. 6-8. Dr. W. W. Bauer, 535 North Dearborn St., Chicago 10, Secretary.

NORTH CENTRAL MEDICAL CONFERENCE, Hotel Radisson, Minneapolis, Nov. 11. Mr. R. R. Rosell, 496 Lowry Medical Arts Bldg., St. Paul 2, Secretary.

NORTH PACIFIC SURGICAL ASSOCIATION, Vancouver, B. C., Canada, Nov. 16-17. Dr. J. A. Duncan, 509 Olive Way, Seattle, Wash., Secretary.

PUERTO RICO MEDICAL ASSOCIATION, Santurce, Dec. 12-16. Dr. Victor J. Montilla, P. O. Box 3866, Santurce, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Chicago, Dec. 3-7. Dr. Donald S. Childs, 713 E. Genesee St., Syracuse 2, N. Y., Secretary.

STATE MEDICAL JOURNAL CONFERENCE, Chicago, Nov. 12-13. Mr. A. J. Jackson, 535 North Dearborn St., Chicago 10, Secretary.

SOUTHERN MEDICAL ASSOCIATION, Dallas, Texas, Nov. 5-8. Mr. C. P. Loranz, 1020 Empire Bldg., Birmingham 3, Ala., Secretary.

SOUTHERN SURGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Dec. 4-6. Dr. John C. Burch, 2112 West End Ave., Nashville 5, Tenn. Secretary.

WESTERN SURGICAL ASSOCATION, Broadmoor Hotel, Colorado Springs, Colo., Nov. 29-Dec. 1. Dr. Michael L. Mason, 154 E. Erie St., Chicago 11, Secretary.

INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, Hon. General Secretary.

COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

INTERNATIONAL COLLEGE OF SURGEONS, Madrid, Spain, May 20-24. Dr. Max Thorek, 850 West Irving Park Road, Chicago, Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, Mexico City, Mexico, Dec. 11-19. Mrs. Grace E. O'Neill, Division of World Affairs, National Association on Mental Health, 1790 Broadway, New York 19, N. Y.

INTERNATIONAL CONGRESS ON NEUROPATHOLOGY, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

PAN AMERICAN CONGRESS OF OPHTHALMOLOGY, Mexico City, Mexico, Jan. 6-12. Dr. Luis Sanchez Bulnes, Gomez Farias 19, Mexico 4, D.F., Secretary-General.

PAN AMERICAN CONGRESS OF PEDIATRICS, Montevideo, Uruguay, Dec 5-8. Dr. Maria Luisa Saldien de Rodriguez, Avenida 18 de Julio, 1246, Montevideo, Uruguay, General Secretary.

PAN AMERICAN MEDICAL WOMEN'S ALLIANCE, Montevideo, Uruguay, Dec. 2-8. Dr. Elizabeth Mason Hohl, 1234 North Vermont Ave., Los Angeles 27, President.

PAN PACIFIC SURGICAL ASSOCIATION CONGRESS, Honolulu, Hawaii, Nov. 7-19. Dr. Forrest J. Pinkerton, Suite 7, Young Bldg., Honolulu, Hawaii, President.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* All centers where there are five or more candidates. Final date for filing application is Dec. 17. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: Various Locations, July 18. Final date for filing application is Jan. 18. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various centers. Chicago, March 1952. *Oral.* Chicago, May 1952. Final date for filing application is Feb. 1, 1952. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* The schedule of oral examinations for 1951 has been arranged on a regional basis as follows: New York, Nov. 12-14, covering Maine, Massachusetts, New Hampshire, New York and Vermont. Final date for filing applications was Sept. 1.

Oral examinations in the subspecialties will be held at the same time and place and on the same distribution.

Subspecialty examination in Gastroenterology. San Francisco, Oct. 19 and Buffalo, N. Y., Nov. 19.

Exec. Sec., Dr. William A. Werrell, 1 W. Main St., Madison 3.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May 1952. Final date for filing applications for the May 1952 examination is Jan 1, 1952. Sec., Dr. W. J. German, 789 Howard Ave., New Haven 4, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written.* Feb. 1, 1952. Final date for filing applications is Nov. 1. *Oral.* Chicago, June 9-13, 1952. Final date for filing application is Feb. 1, 1952. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* Twenty-five centers, Feb. 4-5, 1952. Sec., Dr. Edwin B. Dumphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Final date for filing applications for the 1952 Part II examinations was Aug. 15. Final date for filing application for the 1952 Part I examination is Nov. 30. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago 3.

AMERICAN BOARD OF PEDIATRICS: Written examination under local monitors, Jan. 11. This is the only written examination which will be given during 1952. *Oral.* New York City, Feb. 1-3; St. Louis, Mo., April; Washington, D. C., May 3-5; San Francisco, late June; Chicago, October and Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: *Parts I and II.* Chicago, June. Sec., Dr. Robert L. Bennett, Georgia Warm Springs Foundation, Warm Springs, Ga.

AMERICAN BOARD OF PROCTOLOGY: Philadelphia, Nov. 17-18. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

AMERCIAN BOARD OF PSYCHIATRY AND NEUROLOGY: *Oral* New York, Dec. 17-18. Final date for filing applications was Sept. 1. Act. Sec., Dr. David A. Boyd Jr., 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: Spring 1952. Final date for filing application is Dec. 31. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written.* Various Centers. March 1952. Final date for filing application is Dec. 1, 1951. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

BOARD OF THORACIC SURGERY: *Oral.* St. Louis, Nov. 2. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2, Mich.

AMERICAN BOARD OF UROLOGY: Chicago, Feb. 9-13, 1952. Final date for filing applications was Sept. 1. Sec., Dr. Harry Culver, 30 Westwood Rd., Minneapolis 16.

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DEATHS

Caldwell, Bert Wilmer, Rockton, Ill.; born in Effingham, Ill., Feb. 20, 1875; Barnes Medical College, St. Louis, 1898; veteran of the Spanish-American War and World War I; in charge of government hospitals with the Isthmian Canal Commission in Panama from 1905 to 1915, when he became a member of the Rockefeller-Red Cross Commission to the Balkans; in 1916 was attached to the American Embassy in Berlin as commissioner for inspection of Allied Prison camps in Germany; in charge of the eighth district of the U. S. Public Health Service in Chicago in 1919; from 1920 to 1922 stationed in Mexico on the Yellow Fever Commission sponsored by the Rockefeller Foundation and had charge of the entire gulf coast from Tampico to Yucatan; superintendent of Allegheny General Hospital in Pittsburgh, 1916-1917, University Hospitals in Iowa City, from 1922 to 1925, and the Tampa (Fla.) Municipal Hospital from 1925 to 1927; member of the American College of Hospital Administrators; for many years executive secretary of the American Hospital Association and from 1936 to 1942 editor of its magazine *Hospitals*; died in Beloit Memorial Hospital, Beloit, Wis., July 26, aged 76.

Thomas, Robert William ✠ Lieutenant Commander, U. S. Navy, retired, Pasadena, Calif.; born in Cincinnati Sept. 29, 1877; Medical College of Ohio, Cincinnati, 1905; commissioned a lieutenant (j. g.) in the Naval Reserve Force in 1917 and during World War I served aboard the *USS Buffalo;* was commissioned a lieutenant in the medical corps of the Regular Navy on Aug. 3, 1920; served at many of the continental hospitals, aboard ships of the fleet and on Asiatic stations; in 1937 was assigned to the Naval Medical Center, Washington, D. C.; placed on the retired list Oct. 1, 1941 but continued to serve on temporary duty until Aug. 18, 1945; died in the U. S. Naval Hospital, San Diego, Aug. 30, aged 73.

Cappleman, James Jacob, Honey Grove, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1901; member of the American Medical Association; for many years a member of the school board; health officer; died in Baylor University Hospital, Dallas, recently, aged 74, of esophageal varices.

Coombs, George Appleby ✠ Augusta, Maine; Medical School of Maine, Portland, 1900; formerly affiliated with U. S. Public Health Service; served as city physician; for many years on the staff of Augusta General Hospital, where he died July 22, aged 77, of coronary thrombosis.

Dinkler, Frederic, Loveland, Colo.; John A. Creighton Medical College, Omaha, 1905; died Aug. 14, aged 70, of coronary occlusion.

Eubank, Charles D., Vinton, Va.; College of Physicians and Surgeons, Baltimore, 1884; died Aug. 21, aged 92.

Frederickson, Guy Uriah Yale ✠ Willmar, Minn.; College of Medical Evangelists, Loma Linda and Los Angeles, 1924; died July 4, aged 58, of injuries received in an automobile accident.

Free, Evans Murphy, Stewartstown, Pa.; College of Physicians and Surgeons, Baltimore, 1899; died June 13, aged 74, of coronary thrombosis.

Glover, Milton Hall ✠ Wichita Falls, Texas; University of Texas School of Medicine, Galveston, 1915; member of the Radiological Society of North America and the American College of Radiology; specialist certified by the American Board of Radiology; served during World War I; formerly secretary and president of the Texas Radiological Society; for many years on the staff of Wichita General Hospital; died June 19, aged 62, of coronary thrombosis.

Goldberg, Morris, Cincinnati; Ohio State University College of Medicine, Columbus, 1940; member of the American Medical Association; served during World War II; affiliated with Longview State Hospital and Jewish Hospital; died July 9, aged 48, of coronary thrombosis.

Goldstein, Joseph ✠ Los Angeles; Stanford University School of Medicine, San Francisco, 1923; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; on the staffs of the California, Cedars of Lebanon, and Los Angeles County hospitals; died June 28, aged 56, of coronary occlusion and hypertension.

Grant, William Victor ✠ Andover, Mass.; Boston University School of Medicine, 1902; died July 28, aged 76, of coronary thrombosis.

Herzog, Edward ✠ Long Island City, N. Y.; Univerzita Komenského Fakulta Lékárska Bratislava, Czechoslovakia, 1920; died at White Meadow Lake, Rockaway, N. J., Aug. 25, aged 57, of coronary thrombosis.

Huff, Reginald Grieve, Dearborn, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1926; member of the American Medical Association; owner of Wayne Clinic in Wayne; died in Lexington, Ky., June 28, aged 48, of a "heart attack."

Kahler, Glenn Emitt ✠ Post, Texas; University of Texas School of Medicine, Galveston, 1934; formerly instructor in anatomy at his alma mater; served overseas during World War II; served as member of the city commission and as mayor; died June 2, aged 39, of acute circulatory failure and insulin shock.

King, Milo O., Rochester, Ind.; Rush Medical College, Chicago, 1896; member of the American Medical Association; served as mayor; died in Woodlawn Hospital July 4, aged 82, of coronary occlusion.

Lanahan, Charles Rice ✠ Colonel, U. S. Army, retired, Columbus, Ga.; University of Louisville (Ky.) Medical Department, 1913; U. S. Army Medical School, 1927; fellow of the American College of Surgeons; served during World War I; entered the medical corps of the Regular Army Oct. 30, 1918; served during World War II; retired with rank of colonel on Feb. 29, 1948; died in the U. S. Army Hospital June 18, aged 62, of myocardial infarction.

Langstaff, James Hartzell ✠ Fairbury, Ill.; Illinois Medical College, Chicago, 1904; fellow of the American College of Surgeons; served during World War I; on the staff of Fairbury Hospital; died suddenly July 5, aged 67, of coronary occlusion.

Laughlin, John Thomas, Grey Eagle, Minn.; Milwaukee Medical College, 1908; member of the American Medical Association; member of the staff of St. Gabriel's Hospital at Little Falls and of St. Michael's Hospital at Sauk Centre; died in Burtrum, June 11, aged 68, of coronary occlusion.

Lister, John L., Mount Olive, N. C.; Medical College of Virginia, Richmond, 1896; member of the American Medical Association; died recently, aged 77, of pneumonia and diabetes mellitus.

Nichols, Alvan Alexander, Sylva, N. C.; University of Nashville (Tenn.) Medical Department, 1898; member of the American Medical Association; member of the Selective Service Board during World War II; on the staff of the C. J. Harris Community Hospital; died Aug. 9, aged 76, of carcinoma.

Shawen, Charles Edwin, Dayton, Ohio; Chicago Homeopathic Medical College, 1901; Rush Medical College, Chicago, 1903; affiliated with Miami Valley Hospital; died Aug. 24, aged 75.

Tibbitts, Ulysses J., Waukesha, Wis.; Milwaukee Medical College, 1898; member of the American Medical Association; died June 10, aged 86, of arteriosclerotic cardiovascular disease.

Whitmore, Walter S. ✠ Staunton, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the Radiological Society of North America; health officer of Staunton; served on the staff of King's Daughters' Hospital; died July 31, aged 77, of coronary occlusion.

✠ Indicates Fellow of the American Medical Association.

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FOREIGN LETTERS

PARIS

Congress of the Association of French-Speaking Pediatricians.—This congress was held in Algiers from May 7-9, under the presidency of Professor Sarrouy, dean of the faculty of medicine and professor of infant clinics in this city. Over 500 physicians attended, including numerous delegates of foreign countries. Professor Turpin and Drs. Duchêne, Schûzenberger, and Sutter, on the basis of observations in hundreds of families with numerous children, delivered a lecture entitled "Influence of The Order of Birth and the Parents' Ages on Physiopathological Characters of Children." Prof. M. Lamy and Drs. Minkowski and Choucroun dealt with diseases of the embryo caused by maternal rubella. Bamatter (Geneva) stressed the social consequences of rubella and toxoplasmosis. In contrast to genetic malformations, those due to rubella do not occur in later children. In regard to toxoplasmosis, search for the sources of infection, careful examination of the mother, and treatment with antibiotics, when necessary, may diminish the danger of contamination during a later pregnancy. Giroud discussed, among other things, his personal investigations on the role of vitamin B_{12} and pantothenic acid.

Jahier and Fabiani report the results of their investigations showing the possible passage of Plasmodium Berghei in the mouse through the placental membrane, as well as through cutaneous excoriations, thus proving the existence of congenital malaria, a still discussed notion. Lavier and Schneider explained that, although quinine remains a good medication for crises in malaria, it must not be used without caution; in France, "rhodoquinine" (6-methoxy-8-diethylamino-N-propylamino-quinoline) is used as a gameticide to prevent relapses. The authors strongly repudiate intravenous administration, and intramuscular and subcutaneous injections ought to be employed only with much caution.

Intoxication Following Inhalation of Hair Lotions.—In 1932 the Medical Society of the Paris Hospitals called attention to the danger of hair lotions containing carbon tetrachloride. Recently, some serious accidents and one fatality caused their sale in France to be officially restricted. J. Hamburger, G. Richet, and associates reported to the Medical Society of Paris Hospitals, at the meeting of April 6, 1951, on two particularly severe cases of liver and kidney damage in healthy young women following the application of products containing 90% carbon tetrachloride. The product was applied in a dressing room, with closed windows. Hepatitis was indicated only by hepatomegaly; there was no subicterus and no hemorrhagic syndrome. The occurrence of anuretic, azotemic nephritis without hypertension indicated acute tubular impairment. In the first case, the symptoms were noticeable 48 hours after transient faintness. Six weeks later, urine still contained numerous red blood cells. Two months later a 43% reduction in urea clearance remained, but the authors hope for ultimate complete recovery of renal function. Hepatitis, on the other hand, may leave sequelae. Histological and even clinical cirrhosis has been reported following carbon tetrachloride poisoning. In the second case there was an immediate and transient malaise; 16 hours later gastrointestinal signs developed, and on the third day acute nephritis. The patient died on the 11th day after a crisis with acute pulmonary edema. Autopsy, performed five hours after the death, revealed edema of both lungs; liver weighing 1,700 gm. and showing signs of diffuse toxic hepatitis; large, soft kidneys weighing 160 and 200 gm., with signs of subacute nephritis. The blood contained 32 mg. of carbon tetrachloride per liter. The persistency of the toxic agent in the organism probably played an important role by inducing encephalic and pulmonary disorders. At the same meeting, Mahadou and Cahn reported a case of intoxication by a fire extinguisher, which was published in *Paris Médical* of Feb. 10, 1951. The patient had severe hemoptysis and acute edema of the lung but eventually recovered.

The items in these letters are contributed by regular correspondents in the various foreign countries.

NORWAY

Meeting of the Norwegian Medical Association.—At the general assembly of the Norwegian Medical Association in September, its outgoing president, Prof. Axel Ström, delivered the opening address. At present the government and the physicians are far from agreeing on the conditions under which the latter must serve the community. According to the present arrangement, physicians are paid for each visit to insured persons, partly out of insurance funds (to which both employer and worker contribute) partly out of the patient's own pocket. It is the latter payment that the government disapproves of, aiming at complete exemption for the patient from this levy. The government's aims are in principle as follows: (1) free treatment for all, (2) free choice of physician by the patient, (3) a suitable distribution of physicians throughout the country, (4) a system of remuneration rendering physicians financially independent of the sickness of each patient, (5) a system of remuneration that encourages a high quality of service and postgraduate study, and (6) a system of remuneration that promotes cooperation between physicians and that has possibilities for greater efficiency, the regulation of working hours, and pensions. Government spokesmen have expressed dissatisfaction with a system that makes a general practitioner dependent for at least some of his income on having a certain amount of illness in the persons in his charge. Such a system, it is argued, may impair a physician's interest in strictly preventive work and may open up possibilities of superfluous medical treatment. The government, it seems, would like to replace the present system of remuneration of physicians treating insured persons by the so-called English system, i. e., a fixed capital sum each year per head whether the insured person is well or sick.

In his dispassionate discussion of the conflicting views of the government and the Norwegian Medical Association, Professor Ström admitted that one of the most important objections to the present arrangement is the uneven distribution of physicians throughout the country. Any proposal calculated to mitigate this evil deserves the serious attention of the medical profession. Another aspect of the government program deserving special attention by physicians is the provision of suitable pensions for them. Under the present circumstances, and with the system of taxation at present in force, the general practitioner is unable to save enough of his income to provide properly for his old age. With these and other considerations in mind, Professor Ström urged his colleagues to await further developments before making any immediate decisions. On the other hand, he insisted that the present rates of payment are so low that an adequate income cannot be earned without impairment of the service given. As a searching statistical analysis has shown, the amount of work done by physicians has increased by 38% between 1938 and 1948, yet the net income per unit of work is less now than it was before World War II.

In a resolution adopted at this meeting in September, disapproval was expressed of the failure on the part of the authorities to consult the representatives of the medical profession before drafting schemes of reform. It was stated that "in particular, the doctors' meeting wishes to emphasize that experience has shown that completely free medical treatment leads readily to misuse in the form of unnecessary calls on doctors, thereby increasing their work to an unreasonable degree." The meeting also declared that the present arrangement is based on mutual respect and cooperation between physicians and insurance administrators, without unreasonable administrative expenses. "The arrangements proposed (by the authorities) cannot in the opinion of the doctors' meeting satisfactorily replace the present arrangement." At the same meeting a resolution was adopted in favor of a material increase in the charges to be made by physicians for each service rendered.

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PORTUGAL

Fourth International Blood Transfusion Congress.—With its moorish background, tropical summer, and pastel-colored backdrop, Lisbon was the venue of the fourth International Blood Transfusion Congress. This westernmost extremity of Europe was largely destroyed by an earthquake in 1755. Because of this, Lisbon is an 18th century city. More recent economic transfusions resulting from the export of tungsten (wolfram) and coffee have further modernized the city with highways, parks, an airport and rehousing settlements.

The attendance of 300 was representative of at least 26 countries, but French, English, and Portuguese were the official languages. It was soon obvious, especially in the serology section meetings, that the frontiers of knowledge in this field were advancing on an ever-widening perimeter. As the splendid historical exposition reminded us so graphically, the discoveries of the ABO system (and later the Rh system) constituted the starting point of a special type of transplant to which the whole world now pays scientific and public tribute. Today, blood transfusion organizations act as patrons to those who study the fundamental aspects of serology.

Coombs of England, already canonized in the temples, took this thought a step further when he summarized for a plenary session the work of the serology section. "There are no serological disciplines peculiar to investigations on blood groups," he said. "Serology is a branch of biology in its own right. The study of the blood groups has already thrown much light on the nature of antibodies. The new investigative techniques are revealing fundamental physiological precepts, which are being applied in other fields, such as bacteriology.

Coombs gave evidence which could be interpreted as supporting the hypothesis that antigens are attached at different levels of the cell surface. The work by Coombs, Gleeson, White, and Hall indicated that the surface of the cell is not flat and smooth but resembles a golf ball in having regular indentations or furrows. The antigens situated in the "valleys" require special antibody treatment for their demonstration. The action of trypsin in demonstrating this sensitization in some of these cases might be due to a "surface-smoothing" action on the cell.

Using Rh antibody tagged with radioiodine in vitro, Bournsell, Moyle, and Coombs gave progress results which suggested that the number of D-Rh receptors on a red cell is very small. The receptors on a cell with a positive Paul-Bunnell reaction, on the other hand, are numerous. The interesting conjecture is whether a homozygous cell has twice the number of receptors compared with one that is heterozygous.

In anthropology, Mourant stated that blood groups are the ideal tool for the study of racial relationships. These are not affected by environment; they are inherited according to simple genetic laws. Each of the nine known systems of blood groups is inherited independently of the other.

Dr. J. Tullis (U. S. A.) gave an account of his studies on the preservation of the white cells of the blood. A nonwetting surface and the avoidance of heparin and citrate are the first essentials. Gelatin (1%), for reasons not known, helps to preserve the white cells. Dextrose (0.5 gm. per 100 cc.) supplies the metabolic needs, and ethylene diamine tetracetic acid (0.35%) helps to avoid the delayed clotting due to death of some of the leukocytes. Phenol red is added to indicate the hydrogen-ion concentration, which must not fall below 7. A buffered phosphate medium maintains this state.

The vitality of a white cell can be judged by five means:

1. Respiration. There is a change of the medium from aerobic to anaerobic about the end of the sixth day.

2. Phagocytosis. This can be estimated by the action of the cell on starch granules. The addition of fresh plasma or serum about the 10th day will restore this function.

3. Ameboid activity. This is usually lost about the ninth day but has been known to continue for a month.

4. Loss of Brownian movement. There is a temporary increase of this just prior to death of the cell.

5. Resistance to permeable dyes, such as eosin. Tullis pointed out that, while morphology is not a good index of the health of the cell, a round-shaped white cell is usually a dead cell. In aleukemic leukemia there is a strong leukotoxic factor, he said, and 18% of subjects cannot be given white cells because of immediate lysis. This latter observation suggests that white cells have types like red cells. The eosinophils last the longest of all the white cells. In his report on the preservation of thrombocytes, Tullis found that half of the thrombocytes were not clumped when the solution containing them was passed over an ion exchange resin. Their nonspecific agglutination was controlled by 0.2 mg. (per 100 cc.) of sodium or potassium acetate. Thrombocyte viability was difficult to measure. Their thromboplastic activity was the best guide. It was found that one to five small flagella-like processes can be shown by phase microscopy to extend from each thrombocyte. Transfused thrombocytes have been shown to be viable after four days, and such a transplant is of clinical value after loss of marrow activity due to radiation. There appears to be an anti-thrombocyte antibody, which, like the leukotoxic antibody, requires complement.

J. A. Griffols-Lucas (Spain) reported studies of plasmaphoresis in man. He found that, in well-nourished subjects, 1 liter of plasma could be withdrawn each month with little effect on the plasma protein level. The donors were bled weekly. The blood was immediately centrifuged, the plasma decanted, and the red cells suspended in saline and then returned to the circulation.

Dr. Koster (Denmark) established some useful principles for the standardization of infusion equipment on an interchangeable and international basis. It was pointed out that on the Korean front blood had to be poured from bottles used by one nation into bottles used by another nation before a worker from the latter nation could use it. The principles he suggested are as follows:

1. The apparatus should be able to be used by small or large organizations and should be adopted by commercial houses and by the hospital departments that prepare intravenous fluids.

2. The system should be closed; it should be simple and of low cost.

3. Each country should be able to produce the equipment from its own resources.

4. If the equipment is to be used once and discarded, the cost per item must be less than that of cleaning and resterilizing.

It was obvious that the last word on standardization had not been said. There were still many problems inherent in the use of plastic bags and sets, but the ultimate future of these seemed promising.

E. T. Cohn (U. S. A.) demonstrated the exciting principle of immediate separation of the blood into its major components. The blood is first chilled, the calcium withdrawn by passage through an exchange resin and then separated by continuous spinning. The plasma is then fractionated by chemical means.

T. P. Bull (England) reported the successful use of dextran in the parenteral treatment of burns. The general formula was the use of a liter of dextran for every 10% of burned area. Half that amount is given in the first six to eight hours and the remainder in the ensuing 18 hours. There was no evidence of immediate or late toxicity, and there were no signs of anaphylaxis. The age of the patient and the area of burn determine the mortality rate. As age increases, the mortality rate increases. There was no difference in the mortality experience as between dextran and plasma.

A. Eyquem (France) reported some studies on the blood groups of cats and the production of isoimmunization in pregnant animals. This work promises to be a valuable contribution to the basic knowledge of erythroblastosis fetalis. Such fundamental work is rare in this field.

At the final plenary session, some members expressed the viewpoint that, engineering aspects excepted, further progress in blood transfusion would be along the lines of basic physiological studies. These would best be dealt with by a congress on hematology.

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CORRESPONDENCE

A RAPID EMERGENCY TREATMENT FOR HYPERVENTILATION SYNDROME

To the Editor:—The hyperventilation syndrome is commonly seen among soldiers of the neuropsychiatric type. During training, which to them is mentally severe, they suddenly collapse. History reveals that they felt they could not breathe and then began to breathe very rapidly, were dizzy, felt numb over the extremities, and may have had mild epigastric pain. Examination shows a stuporous person, writhing about, with painful upper extremities in carpopedal spasm, and rapid respiration with no cyanosis, and emotionally difficult to control when questioned.

The rationale of treatment is to restore normal blood carbon dioxide levels, which have been reduced by hyperventilation and which lead to pain and tetany. The usual method of treatment is to give a sedative and admit the patient to a hospital, but this does not give quick results. An occasional patient will cooperate by holding his breath, which will restore carbon dioxide. Usually, however, the patient is too distressed and disturbed to cooperate. Dramatic relief can be obtained by the simple expedient of holding a paper bag over the nose and mouth, reassuring the patient, and telling him to breathe into the bag. Within three to five minutes, symptoms and spasms are relieved. The hysterical aspect is then controlled by a sedative of any sort. More elaborate treatment would include administration of 10% carbon dioxide and 90% oxygen. It is, of course, wise to then refer the patient for psychiatric examination for the underlying causes.

ALEXANDER WINTER, M.D.
98-50 67th Ave., Forest Hills, N. Y.

TECHNIQUE OF THORACENTESIS

To the Editor:—With reference to the article in THE JOURNAL (146:1597 [Aug. 25] 1951) entitled "Practical System for Thoracocentesis Using the Blood Donor Set," by Dr. Robert D. Beech of Salt Lake City, may I point out that I discussed exactly the same method in a letter in *M.D.* (3:88 [Feb.] 1951), a journal for students and recent graduates in medicine, published at Chicago. I said in this note: "For aspirating pleural effusions I find the following method time-saving and more pleasant for the patient as it permits removal of fluid under equal pressure and without juggling the needle. I use a vacoliter® flask of 450 cc. (as used for transfusions) and connect the 17 gauge needle with a thin rubber tube, which is armed with another 17 gauge needle. The latter I insert in the vacoliter® flask. The fluid is drawn out by the vacuum in the bottle. The thin rubber tube partially collapses and the fluid is removed gradually and gently. Pneumothorax is avoided and the fluid is sterile and can be used for button determinations."

W. B. BERGMANN, M.D.
354 Hobart St., Oakland 12, Calif.

[*The paper by Dr. Beech was submitted to* THE JOURNAL *for publication on Dec. 7, 1950.*—ED.]

CARE OF PATIENT DURING LABOR AND DELIVERY

To the Editor:—The instructive article "Principles for Improving Patient Care in the Hospital Labor and Delivery Suite," by Gold, Faison, and Wallace, in the Aug. 18, 1951 issue of THE JOURNAL, describing the essential features of care during labor and delivery, was of great interest to us, since in Chicago, for 13 years, regulations aimed at requiring this type of care have been in force.

We have come to the conclusion that the outlining of the essential features of care during labor and delivery, and even the adoption of regulations requiring such care, do not produce the desired results unless some adequate system is established to enforce the regulations. Such enforcement is, of course, facilitated when all medical, nursing, and hospital groups are in sympathy with the regulations and exert cooperative effort. The enforcing agency must know from month to month whether the regulations are being violated. There must be some system established for regular inspection of hospitals, and a method devised for rating the degree of compliance with the regulations.

We believe we have solved this situation in Chicago by employing the same system that we found efficacious in enforcing the regulations for dairy farms and food-purveying establishments. This system involves the use of a scoring form that includes every item of the regulations. Without such a scoring form, there is no uniform means of rating the various establishments and no satisfactory way of enforcing the regulations.

Now, for the first time, we have in Chicago a scoring form with which to check the personnel, procedures, facilities, records, and equipment in the maternity divisions of hospitals and newborn and premature nurseries. With this system we are able quickly to detect violations so that they may be promptly called to the attention of the hospital administrator and corrective measures instituted. We feel that the use of such a scoring system by the health department is a most important factor in improving facilities for obstetric care and care of the newborn and, thus, will contribute to further reductions in maternal and neonatal mortality rates.

In a forthcoming publication we describe completely the scoring form and scoring system that we are now employing.

HERMAN N. BUNDESEN, M.D., President
Chicago Board of Health, Chicago.

HICCUPS AND CORONARY ARTERY OCCLUSION

To the Editor:—The article "Hiccups in Coronary Thrombosis Relieved with Phrenic Crush," by Rubin, Albright, Bornstein and Schwimmer, which appeared in THE JOURNAL of Aug. 11, 1951, states: "Review of the literature fails to mention this severe complication in any detail." May I call your attention to my paper "Hiccups as a Complication of Acute Coronary Artery Occlusion," which appeared in the *Annals of Internal Medicine* in July, 1939 (page 187).

MORRIS M. WEISS, M.D.
614 Brown Bldg., Louisville 2, Ky.

LOCAL HEALTH UNITS

To the Editor:—Your recent editorial regarding local health units (*J. A. M. A.* Sept. 22, 1951) causes me a great deal of concern. If the medical health units could confine themselves to the limitations set down by the American Medical Association, then all would be well; I would have no cause for argument or concern. However, it is hard to breathe life into an institution without encouraging within it (and those that run it) the desire for growth and expansion.

Of the two health centers currently functioning in the United States, one is located in my own city of Quincy, and I have had an opportunity to observe its attempts at self-inflation at close hand. As a matter of fact, one can count on almost daily publicity releases emanating from this source in a determined effort to enhance its prestige in the eyes of the public.

Every physician will agree with me that the practice of medicine must be confined to the home, to the hospital, and to the doctor's office. The health center must never be allowed to practice medicine. It must never be allowed to propagandize the public in favor of any socialistic dogma.

JOSEPH D. WASSERSUG, M.D.
1159 Hancock St., Quincy 69, Mass.

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MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Ind. Hyg. & Occup. Med., Chicago

4:103-192 (Aug.) 1951

Size of Cuttings Produced by Pneumatic Drilling with Different Kinds of Detachable Bits. C. E. Brown.—p. 103.
Range-Finding Toxicity Data: List IV. H. F. Smyth Jr., C. P. Carpenter and C. S. Weil.—p. 119.
*Epidemiology of Beryllium Intoxication. J. H. Sterner and M. Eisenbud. —p. 123.
Organic Pesticides—New Health Hazards. J. C. Ward.—p. 152.
Generation of Phosgene During Operation of Trichloroethylene Degreaser. L. W. Spolyar, R. N. Harger, J. F. Keppler and H. E. Bumsted. —p. 156.

Beryllium Intoxication.—Developments during the past few years have clarified the role of beryllium in the etiology of various disease manifestations: 1. The acute toxicity of beryllium per se has been demonstrated in laboratory animals. 2. There have been several reports of cutaneous granulomatous lesions that followed the accidental implantation of fragments of fluorescent tubes containing beryllium phosphors, and these lesions have been duplicated in laboratory animals. 3. The number of chronic cases reported in the literature has increased substantially. Acute beryllium poisoning has been reported as resulting from exposure to beryllium metal, beryllium oxide, the sulfate, the fluoride, the hydroxide, and the chloride. The ability of beryllium oxide to produce acute pneumonitis depends on the physical properties of the material and the manner in which it was prepared. The occurrence of acute disease is further dependent on concentrations in air which exceed 100 γ/cu. m. Chronic beryllium poisoning (berylliosis) has occurred following very minimal exposure. Ten residents in the vicinity of a beryllium-producing plant incurred berylliosis on being exposed to concentrations that did not exceed 1 γ/cu. m. and were probably of the order of 0.1 γ/cu. m. Occupational berylliosis within this plant occurred in only six of 1,700 employees. None of the six employees had been exposed for longer than four months. Because many characteristics of berylliosis differ from the pattern of a direct chemical intoxication the latter must be excluded as the probable important mechanism in the causation of the disease. Berylliosis is more readily understandable by the concept that the essential mechanism is a modified immunologic reaction in which beryllium is the specific allergen. In the body beryllium combines with protein to form an antigen, which in turn stimulates a beryllium-specific antibody. An inflammation results from the subsequent reaction of beryllium and this specific antibody. When the antibody excitation occurs in the skin, the skin is the shock tissue and develops the inflammatory reaction on subsequent beryllium insult. By analogy, the beryllium in the lung stimulates antibody production in that organ, and with the lung as the shock tissue, further beryllium insult results in inflammation. With the degree of sensitization as an important variable in the pathogenesis of the lesion, the disparity between the lung content of beryllium and the severity of the lung lesion becomes understandable. The granuloma, the distinctive lesion in all these manifestations, is now accepted as a characteristic pathological feature of a chronic allergic reaction. The systemic manifestations of berylliosis, of variable pattern and not easily explained by the degree of lung involvement, may well be due to immunotoxic reactions in other tissues. The failure to reproduce the disease in animals may be explained by the fact that man has a degree of hyperreactivity not observed in lower forms.

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1940 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

An asterisk (*) before a title indicates that the article is abstracted.

American Journal of Physiology, Baltimore

166:1-228 (July) 1951. **Partial Index**

Prothrombin Conversion Factors in Blood Coagulation. C. A. Owen Jr., T. B. Magath and J. L. Bollman.—p. 1.
Role of Cardioacceleration in Chronic Experimental Neurogenic Hypertension. J. W. McCubbin and I. H. Page.—p. 12.
Hematologic Changes in Rats Protected by Cysteine Against Total Body X-Irradiation. R. L. Rosenthal, L. Goldschmidt and B. I. Pickering. —p. 15.
Reduction of Blood Flow Through Hypoxic Lung. R. J. Atwell, J. B. Hickam, W. W. Pryor and E. B. Page.—p. 37.
Responses of Vasomotor Center to Hypoxia After Denervation of Carotid and Aortic Bodies. T. Bernthal and C. C. Woodcock Jr.—p. 45.
Evidence for Non-Thyroxine Thyroid Factor Which Affects Gastric Function. R. N. Watman and E. S. Nasset.—p. 131.
Effect of Perfusion of Isolated Intestinal Loops on Experimental Uremia in Dogs. H. Sloan.—p. 137.
Insulin and Volume of Distribution of Glucose. D. R. Drury and A. N. Wick.—p. 159.
Effects of Administering Adrenocorticotrophic Hormone by Continuous Injection to Normal Rats. D. J. Ingle, M. C. Prestrud and Choh H. Li.—p. 165.
Effects of Administering Large Doses of Cortisone Acetate to Normal Rats. D. J. Ingle, M. C. Prestrud and J. E. Nezamis.—p. 171.
Effect of Feeding Various Levels of Calcium, Potassium and Magnesium to Rats. R. W. Colby and C. M. Frye.—p. 209.
Glucose Equivalent of Fed Protein. R. W. Bancroft and D. R. Drury. —p. 213.
Blockade of Neurogenic Stimulation of Rabbit Adenohypophysis by Banthine. C. H. Sawyer, J. E. Markee and J. W. Everett.—p. 223.

Annals of Allergy, Minneapolis

9:421-562 (July-Aug.) 1951

Studies in Infantile Eczema: I. Clinical and Statistical Observations on Allergic Background of 247 Consecutive Cases of Infantile Atopic Dermatitis. S. Epstein.—p. 421.
Fungus Allergy: I. Incidence of Atmospheric Spores in Los Angeles Area. A. M. Targow and O. A. Plunkett.—p. 428.
*Allergic Epilepsy. S. C. Dees and H. Lowenbach.—p. 446.
Use of ACTH in Treatment of Ambulatory Asthmatic Patients. E. A. Brown, L. A. Fox, C. Nobili and others.—p. 459.
Standardization of Dust Extracts: III. Precipitin and Collodion Particle Agglutination Experiments. IV. Rabbit Skin Sensitivity Experiments. M. Reitman and M. Scherago.—p. 465.
Repository Penicillin Injections in Allergic Children. S. J. Levin and S. S. Moss.—p. 471.
Spontaneous Animal Allergy: Report of Case. L. Bentolila and S. L. Rabasa.—p. 477.
Clinical Evaluation of Ambodryl Hydrochloride: Report of 100 Cases. J. W. Thomas and F. R. Kelly Jr.—p. 481.
Present Status of Pediatric Allergy. B. Ratner.—p. 487.
Clinical Experience with Chlor-Trimeton Maleate Repeat Action Tablets and Trimeton Maleate Topical 5 Per Cent. F. W. Wittich.—p. 491.
Pyromen Therapy in Treatment of Food Allergy: Preliminary Report. G. A. Zindler.—p. 494.
Pyromen in Treatment of Perennial Respiratory Allergies. F. W. Wittich. —p. 502.
Genesis and Treatment of Recurrent Attack of Asthma. H. Miller and D. W. Baruch.—p. 508.
Mushroom Fly as Cause of Bronchial Asthma. G. W. Truitt.—p. 513.
Effect of Vitamin B_{12} in Asthma. R. E. Kaufman.—p. 517.
General Anesthesia with Cyclopropane for Treatment of Status Asthmaticus. L. Bentolila.—p. 519.
Minor Symptoms and Signs in Food Allergy. C. R. Arp.—p. 522.

Allergic Epilepsy.—Studies of the electroencephalograms of allergic children revealed to Dees and Lowenbach a resemblance between many of these records and those of some children with convulsive disorders. In the children with allergy as well as in those who had both convulsive disorders and allergy they found a high incidence of one abnormality: occipital dysrhythmia. They present observations on 37 children under 14 years of age with convulsive disorders of grand mal and petit mal type. Twenty-two had clinical allergy, and, although the remaining 15 were free from frank allergy, they had various features suggestive of allergy. A family history of allergy was present in nearly all the children of both groups. Five of those who were

free from evident allergy had signs of subclinical allergy. The allergic group had mostly asthma, eczema, and rhinitis, and many had multiple skin sensitivities. Skin sensitivity to foods was found in some of those without definite signs of allergy. Nearly half the nonallergic children reacted to airborne allergens, such as pollens and dusts. Eosinophilia was present at some time in all the allergic children and in half of the nonallergic. No organic brain disease was present in any patient. Occipital dysrhythmia was present in the electroencephalograms in 27 children (nearly three-fourths) of the entire series. The authors present the histories of four patients in whom control of allergy was accompanied by clinical and electroencephalographic improvement. Discontinuation of the allergy regimen was accompanied by recurrence of convulsions and allergic symptoms. The convulsive disorder was controlled in 24 patients with combined antiallergic and symptomatic treatment. Of these, 18 were allergic and 6 were without frank allergy. Allergic symptoms were controlled completely in 8 and partially in 10 of the allergic children. The authors conclude that children with convulsive disorders who also have evidence of allergy merit trial of antiallergic measures in addition to and in conjunction with anticonvulsant therapy.

Illinois Medical Journal, Chicago

100:1-96 (July) 1951

Observations on Nethaphyl in Bronchial Asthma. O. Fond.—p. 7.
Errors in Treatment of Common Fractures. J. T. Coyle.—p. 10.

100:97-164 (Aug.) 1951

Diagnosis and Treatment of Endometriosis. J. P. FitzGibbons.—p. 115.
Indications for Surgery in Gallbladder Disease. R. M. Zollinger and E. H. Ellison.—p. 121.
Psychoses of Later Life. J. J. Madden, J. A. Luhan, I. A. Kaplan and J. J. Reidy.—p. 129.
Painful Shoulder Due to Calcareous Tendonitis. R. C. Crain.—p. 133.

Journal of Nutrition, Philadelphia

44:345-486 (July) 1951. **Partial Index**

Relation of Diets to Development, Prevention and Treatment of Cancer, with Special Reference to Cancer of Stomach and Liver. K. Sugiura. —p. 345.
Growth-Promoting Activity of Bound Pantothenic Acid in Rat. Hwa Lih. Tsoo E. King, H. Higgins and others.—p. 361.
*Absorption of Iron from Spinach by Six Young Women, and Effect of Beef upon Absorption. T. J. McMillan and F. A. Johnston.—p. 383.
Supplemental Value of Cystine and Methionine for Low Protein (Casein) Diets Fed the Young White Rat. H. B. Lewis and R. S. Fajans. —p. 399.
Effect of Stannous Fluoride in Food and in Drinking Water on Caries Prevention in Rats on High Sucrose and Coarse Corn Diets. J. C. Muhler and H. G. Day.—p. 413.
Some Effects of Caloric Intake on Nitrogen Balance in Dogs. H. L. Rosenthal and J. B. Allison.—p. 423.
Role of Vitamin E in Production of Nutritional Liver Injury in Rats on Low Casein Diets. M. Goettsch.—p. 443.
Sex Differences in Growth of Young Rats and Survival of Adult Rats Fed Protein-Deficient Diets. D. B. Jones.—p. 465.
Urinary Excretion of Essential Amino Acids by Human Subjects Fed Diets Containing Proteins of Different Biological Value. E. S. Nasset and R. H. Tully III.—p. 477.

Absorption of Iron from Spinach.—Spinach has fallen into disrepute as a source of iron in the diet, because when the α, α′-bipyridine test for so-called "available" iron in food was developed, spinach, one of the foods highest in total iron content, was found to be one of the lowest in percentage of "available" iron. Only 20% of its iron was found to be available, as judged by either the α, α′-bipyridine test or by hemoglobin regeneration in rats made anemic on a milk diet. The results of studies reported since that time on the feeding of spinach to animals are varied. Furthermore, it has been demonstrated that different species may vary in the degree to which they utilize iron. Studies on human subjects with regard to the absorption of iron have been made mostly on infants, and their response may not be typical of adults, whose digestive tracts are more accustomed to foods high in roughage. The studies reported here were made on six women 20 to 31 years of age. A basal diet was served for four weeks; for the following four weeks 120 gm. of spinach was added to the evening meal of three subjects and to the breakfast of the remaining three; for the last four-week period the time at which the spinach was served was reversed for the subjects. The mean amount of iron absorbed daily by four young women over a period of eight weeks from 120 gm. of cooked spinach containing 5.04 mg. of iron was found to be 13% of the amount present. Since this percentage compares favorably with the percentage of iron absorbed from diets composed of a wide variety of foods, and since the iron content of spinach is higher than that of a majority of foods, spinach may be regarded as a valuable source of iron for young women. On the basis of this study beef cannot be said to increase the amount of iron absorbed from spinach. A possible relationship between the menstrual cycle and iron absorption is suggested by the limited data obtained.

Journal of Thoracic Surgery, St. Louis

22:1-108 (July) 1951

*Progressive Changes in Pulmonary Function After Pneumonectomy: Influence of Thoracoplasty, Pneumothorax, Oleothorax, and Plastic Sponge Plombage on Side of Pneumonectomy. E. A. Gaensler and J. W. Strieder.—p. 1.
Pulmonary Function in Traumatic Hemothorax Treated by Decortication. J. H. Forsee, S. L. Kylar and Hu A. Blake.—p. 35.
Late Changes in Ventilatory Function Following Thoracoplasty. S. R. Powers Jr. and A. Himmelstein.—p. 45.
Lung Function Studies in Poudrage Treatment of Recurrent Spontaneous Pneumothorax. J. S. Paul, E. J. Beattie Jr. and B. Blades.—p. 52.
Significance of Cell Types in Bronchogenic Carcinoma. J. R. McDonald, R. P. McBurney, J. C. Carlisle and M. M. Patton.—p. 62.
Bronchogenic Small-Cell Carcinoma. R. P. McBurney, J. R. McDonald and O. T. Clagett.—p. 63.
Bronchogenic Squamous-Cell Carcinoma. J. C. Carlisle, J. R. McDonald and S. W. Harrington.—p. 74.
Bronchogenic Adenocarcinoma. M. M. Patton, J. R. McDonald and H. J. Moersch.—p. 83.
Bronchogenic Large-Cell Carcinoma. M. M. Patton, J. R. McDonald and H. J. Moersch.—p. 88.
Hemodynamics: Studies on Group of Patients Who Developed Cor Pulmonale Following Thoracoplasty. H. A. Zimmerman.—p. 94.
Solitary Pulmonary Adenoma (Focal Pulmonary Adenomatosis): Three-Year Follow-Up After Resection. G. P. Rosemond, K. R. Boucot and E. Aegerter.—p. 99.
Influence of Streptomycin Resistance upon Success of Cavernostomy for Thoracoplasty Failure. J. D. Murphy and H. V. Swindell.—p. 104.

Pulmonary Function After Pneumonectomy.—To find a solution for overdistention of the remaining lung after pneumonectomy, Gaensler and Strieder studied 40 patients in whom pneumonectomy was planned, in all but five for tuberculosis. The patients were studied before pneumonectomy and at weekly and later monthly intervals thereafter. The techniques employed included standard pulmonary function studies, preoperative bronchospirometry, a modified method of residual volume determination permitting measurement of small changes in that value and a new method for determination of functional residual capacity and pulmonary mixing index for each lung separately before operation. Maintenance of pneumothorax within the space after operation entirely prevented overdistention. When oleothorax was done instead of pneumothorax there was no alteration of pulmonary volume or function. Substitution of plastic sponge plombage for pneumothorax prevented overdistention entirely and corrected overdistention existing prior to pneumonectomy. Plombage did not cause further reduction of maximal ventilatory function. Early thoracoplasty, six weeks to two months after resection, prevented overdistention on deep inspiration by reduction of the vital capacity but did not entirely prevent overdistention in the pulmonary midposition. This procedure caused a further loss of maximum breathing capacity. Late thoracoplasty, six months to two years after resection, corrected existing overdistention only partially and caused a further, permanent reduction of vital capacity and maximum breathing capacity. Pneumonectomy after unsuccessful, extensive thoracoplasty produced no change of pulmonary volume or maximal ventilatory function. Pulmonary function before and after primary pneumonectomy and primary thoracoplasty for functionless lungs were compared. It was shown that primary resection in these patients caused no further loss of function, while the loss of function after thoracoplasty over functionless lungs was marked. There was no evidence that overdistention following pneumonectomy in young patients results in true emphysema with disruption of the pulmonary parenchymal architecture during the first two and one-half years after operation. In older patients, however, there was progression of true emphysema after pneumonectomy.

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Neurology, Minneapolis

1:261-340 (July-Aug.) 1951

Clinical Aspects of Cerebral Anoxia in Man. A. T. Steegmann.—p. 261.
Surgical Treatment of Postherpetic Neuralgia by Subdermal Denervation. K. H. Abbott and B. C. Martin.—p. 275.
Alterations of Cerebral Functions in Pheochromocytoma. N. S. Apter, W. C. Halstead, A. S. Alving and others.—p. 283.
Electroencephalographic Findings in Post-Traumatic Encephalopathy. A. A. Weil.—p. 293.
Intravenous Sodium Amytal in Generalized Language Dysfunction. G. N. Raines and R. Cohn.—p. 299.
Electroencephaligraphic Foci in Temporal Lobes with Consideration of Seizure Manifestations. C. W. Iobst and F. M. Forster.—p. 309.
Sequelae of Western Equine Encephalitis. D. W. Mulder, M. Parrott and M. Thaler.—p. 318.

New England Journal of Medicine, Boston

245:83-120 (July 19) 1951

*Treatment of Incapacitated Euthyroid Cardiac Patients by Producing Hypothyroidism with Radioactive Iodine. H. L. Blumgart, A. S. Freedberg and G. S. Kurland.—p. 83.
*Aureomycin in Treatment of Actinomycosis. L. V. McVay Jr., F. Guthrie and D. H. Sprunt.—p. 91.
Experience with Plastic Tubing in Prolonged Intravenous Therapy. C. D. Bonner.—p. 97.
Reformation of Ovarian Dermoid Cyst. A. A. Levi.—p. 99.
Coarctation of Aorta. J. A. Meyer.—p. 100.

Inducing Hypothyroidism with Radioactive Iodine in Cardiac Patients.—This paper summarizes observations on 37 patients with chronic heart disease in whom the cardiac load was lessened by inducing hypothyroidism with radioactive iodine (I^{131}). These patients all had normal thyroid function as proved by clinical criteria, basal metabolic rate, serum cholesterol, tracer doses of radioactive iodine and, in some instances, the serum protein-bound iodine. Most of them were chronic invalids confined to a bed-and-chair existence or unable to undertake more than slight effort without experiencing angina pectoris or recurrence of congestive failure. Their clinical course had been stationary or only slightly worse during the months immediately prior to treatment; consequently, any striking improvement could be attributed to the radioactive-iodine treatment. The authors found that hypothyroidism can be regularly induced in euthyroid patients by one or more appropriate doses of radioactive iodine. The total dose ranged from 25.5 to 200 mc., the average being 64.5 mc., and the average total body retention being 20.5 mc. Hypometabolism developed from five weeks to six months after an adequate dose. Of the 37 cardiac patients treated, to date 23 have been followed in the hypometabolic state for seven to 26 months. No serious toxic reactions occurred, but transitory mild hypothyroidism occurred in two patients and thyroiditis in approximately two-thirds. As regards cardiac status one-third of the patients have shown rather remarkable improvement; in another third the improvement has been definitely worth while; in another third no improvement was achieved. An attempt has been made to maintain the lowest metabolic rate consistent with the comfort of the patient, and small doses of thyroid were given after the induction of myxedema. Hypothyroidism induced by radioactive iodine promises to accomplish significant improvement through medical means without the inevitable risk and complications of surgical intervention. Final evaluation of this therapy awaits prolonged study.

Aureomycin in Actinomycosis.—McVay and associates had previously reported one case of cervicofacial actinomycosis in which aureomycin had proved successful. In this paper they report two additional cases of cervicofacial and one case of abdominal actinomycosis in which aureomycin was effective. It was noteworthy that no major surgical procedure was required. The treatment of cervicofacial actinomycosis on an ambulatory basis with no interruption of employment is of great practical value. Likewise, oral medication is much to be preferred to the intramuscular route required for penicillin therapy. This is especially true when treatment must be prolonged, as in actinomycosis. No significant toxic reactions to aureomycin were noted. In vitro sensitivity studies on Actinomyces bovis isolated from two of these patients and from two additional cases not included in this series established a definite inhibitory action by aureomycin. Aureomycin exerts a fungistatic effect on Actinomyces bovis, although certain strains are evidently more resistant to aureomycin than others.

Pennsylvania Medical Journal, Harrisburg

54:609-704 (July) 1951

Primary Bronchogenic Carcinoma: Clinical and Pathologic Aspects. T. M. McMillan III and A. R. Crane.—p. 633.
Management of Functional Uterine Bleeding. P. O. Klingensmith.—p. 638.
Management of Acute Intestinal Obstruction. H. G. Kuehner.—p. 641.
Modern Attack on Malignant Disease. S. P. Reimann.—p. 645.
Clinical Aspects of Primary Carcinoma of Lung. J. B. Flick and L. D. Prutzman.—p. 648.
Diagnosis of Congenital Heart Disease in School Children. J. M. Cahan. —p. 652.
Foreign Body in Respiratory Tract: Report of Case of Unusual "Migrating Type." P. H. Shiffer.—p. 657.

Physiological Reviews, Baltimore

31:205-344 (July) 1951

Mechanism of Action of Thyroid Hormone. S. B. Barker.—p. 205.
Determinants of Uterine Growth and Activity. S. R. M. Reynolds. —p. 244.
Some Physiological Aspects of Ageing. A. I. Lansing.—p. 274.
Sodium, Potassium and Chloride Alterations in Disease. R. R. Overman. —p. 285.
Specificity, Mode of Action and Distribution of Cholinesterases. V. P. Whittaker.—p. 312.

Postgraduate Medicine, Minneapolis

10:95-174 (Aug.) 1951

Surgical Evaluation and Management of the Cardiac Patient. M. S. Sadove, B. K. Galston and G. M. Wyant.—p. 95.
Selecting Proper Operation for Benign Hypertrophy of Prostate. C. D. Creevy.—p. 103.
Use and Abuse of Dextrose Tolerance Test. S. Soskin.—p. 108.
Nonallergic Bronchial Asthma. H. L. Alexander.—p. 117.
Lesions of Sigmoid and Rectum. R. B. Cattell.—p. 122.
Differential Diagnosis of Jaundice. W. G. Maddock.—p. 127.
Roentgen Evidence of Bronchogenic Carcinoma. W. W. Furey.—p. 135.

Psychosomatic Medicine, New York

13:211-272 (July-Aug.) 1951

Pseudohermaphroditism: Medical, Social, and Psychiatric Case Study. A. H. Chapman, G. Saslow and F. Watson.—p. 212.
Preliminary Report on Role of Emotional Factors in Idiopathic Celiac Disease. D. G. Prugh.—p. 220.
Evaluation of New Psychiatric Screening Test. G. Saslow, R. M. Counts and P. H. DuBois.—p. 242.
Symbolism and Organ Choice in Conversion Reaction: Experimental Approach. P. F. Durham Seitz.—p. 254.
Method for Isolating Presumptive Personality Profiles from Changes in Skin Conductivity During Word Association Tests. E. H. Hsü.—p. 260.

Rocky Mountain Medical Journal, Denver

48:565-646 (Aug.) 1951

Medical Aspects of Coarctation of Aorta. H. B. Burchell.—p. 587.
Problems of the General Practitioner. C. W. Anderson.—p. 591.
*Tularemia—Muskrats as Source of Human Infection in Utah. W. L. Jellison, G. M. Kohls and C. B. Philip.—p. 594.
Newer Developments in Immunology and Allergy. F. T. Joyce.—p. 597.
Biliary Intestinal Anastomosis for Non-Calculous Biliary Obstruction. G. S. Postma.—p. 602.

Muskrats as Source of Tularemia in Humans.—In the late winter and spring of 1950 in Utah, 11 serologically confirmed cases of tularemia are known to have been contracted from muskrats. Most of these cases were associated with a concurrent epizootic in muskrats on Utah Lake. One of the many muskrats found dead showed the typical lesions of tularemia and yielded pure cultures of Pasteurella tularensis. Unusual muskrat fatalities were observed elsewhere in Utah. In addition to the serologically confirmed cases of tularemia among muskrat trappers, there were other cases of illness that may have been tularemia, but laboratory confirmation is lacking. Records are now available of about 75 cases of tularemia in North America contracted from skinning or handling infected muskrats. Muskrats are a direct source of human infection, and disease among them is usually associated with contamination by P. tularensis of the bodies of water concerned.

FOREIGN

Archives of Disease of Childhood, London

26:195-278 (June) 1951. **Partial Index**

Water Metabolism of Newborn Infants and Animals. H. Heller.—p. 195.
Chemical Development in Utero. E. M. Widdowson and C. M. Spray. —p. 205.
*Myositis Fibrosa Generalisata. A. M. Stewart and A. R. Macgregor. —p. 215.
Cooley's Anaemia in Sinhalese Children. C. C. de Silva and C. E. S. Weeratunge.—p. 224.
Development of Mediterranean Anaemia. A. H. Banton.—p. 235.
Cardiac Concentric Hyperthrophy in Children with Hydrocephalus Due to Tuberculous Meningitis. J. L. Emery.—p. 245.
Congenital Factor in Bronchiectasis. D. J. Conway.—p. 253.
Primary Tuberculosis of Gum. T. A. Brand and C. F. Ballard.—p. 261.

Myositis Fibrosa Generalisata.—Stewart and Macgregor describe the symptomatology and pathology of myositis fibrosa generalisata. A search of the literature disclosed only 11 authentic cases. Five patients contracted the disease in childhood and six in adult life. There are reports of five or six other cases, which can be regarded as atypical. The authors add a new case. They show that there are many similarities between myositis fibrosa generalisata and progressive muscular dystrophy. Their case closely resembled myositis generalisata in its principal clinical and pathological features, and yet it had certain points of resemblance to progressive muscular dystrophy. They feel that myositis fibrosa generalisata is not a separate clinical and pathological entity but is one form of progressive muscular dystrophy. Furthermore, it is essentially a degenerative and not an inflammatory lesion of the muscles.

British Medical Journal, London

2:133-190 (July 21) 1951

Newer Knowledge of Atherosclerosis. J. B. Firstbrook.—p. 133.
Bacterial Flora and Bacterial Counts of Infants' Bottle Feeds. J. Wright. —p. 138.
Results of Re-Examination by Mass Radiography. V. H. Springett. —p. 144.
Technique of Jelly (Tuberculin) Skin-Testing: Comparison Between Various Techniques and Mantoux Test. J. D. Lendrum.—p. 148.
Poliomyelitis in Islington in 1947, 1949, and 1950. V. Freeman.—p. 151.
Immunity to Old and New Strains of Influenza A Virus. P. N. Edmunds. —p. 155.
Presence of Certain Serological Types of Bact. Coli in Human Intestine. W. W. Walther.—p. 156.

2:191-250 (July 28) 1951

*Prolonged Uninterrupted Cortisone Therapy in Rheumatoid Arthritis. E. W. Boland.—p. 191.
*Antidiuretic Effect of Nicotine and Its Implications. J. H. Burn.—p. 199.
Excretion of Small Doses of Folic Acid. G. H. Spray, P. Fourman and L. J. Witts.—p. 202.
Use of Phenylephrine to Aid Auscultation of Early Rheumatic Diastolic Murmurs. E. M. M. Besterman.—p. 205.
Effect of Growth Hormone and of Chorionic Gonadotrophin on Preputial Glands of Female Rat. H. H. F. Barns and G. I. M. Swyer.—p. 207.
Clinical Significance of Fasciculations in Voluntary Muscle. R. S. Schwab, D. Stafford-Clark and J. S. Prichard.—p. 209.
Acute Suprarenal Insufficiency in Pregnancy. I. MacGillivray.—p. 212.
Treatment of Plantar Warts with Elastoplast and Podophyllin. D. A. Duthie and D. I. McCallum.—p. 216.

Prolonged Uninterrupted Cortisone Therapy.—Three questions are raised with regard to the practicability of employing cortisone continuously for long periods: 1. Can satisfactory suppression of rheumatoid arthritis be maintained indefinitely or will resistance to the drug eventually occur? 2. Will continued administration be accompanied by unfavorable hormonal effects, necessitating discontinuation of treatment? 3. Will prolonged administration, especially if continuous, cause irreparable damage to vital organs, such as the adrenal cortex? Seventy-six patients with rheumatoid arthritis were given cortisone in the hope that treatment could be continued uninterruptedly for extended periods. It was necessary to discontinue treatment in 16 of these before six months, but the remaining 60 patients received the hormone uninterruptedly for 6 to 15 months. By using the initial large suppressive amounts, then gradually reducing the dosage, and finally employing smaller maintenance doses, adequate degrees of rheumatic control were maintained in approximately two-thirds of the original 76 patients. The ability to maintain satisfactory improvement varied indirectly, in general, with the severity of the rheumatoid arthritis; decided antirheumatic response was maintained for long periods in 47% of the severe cases, in 70% of the moderately severe cases, and in 92% of moderate and mild cases. The chief obstacle to better results in the severer cases was the occurrence of adverse hormonal side-effects, which developed frequently when large maintenance doses were required. Unwanted signs of hormonal excess developed in 40% of cases at some time during treatment, but most of them were mild or transient and disappeared or lessened when dosage was reduced. During prolonged cortisone therapy evidence of functional suppression of the adrenal cortex, as indicated by a decreased response of circulating eosinophils to exogenous corticotropin (ACTH) was present. The depression of cortical function was temporary, however, and in patients from whom cortisone was withdrawn after 6 to 14 months of continuous therapy, tests of adrenocortical function returned to normal within periods ranging from 10 to 90 days. As experience with cortisone broadens it becomes increasingly evident that there are distinct limitations, difficulties, and dangers in its use in the treatment of chronic diseases. It appears that cortisone may be employed in the management of many cases of rheumatoid arthritis, but it should not be considered as the treatment of choice for most cases, and not as a cure for any case.

Antidiuretic Effect of Nicotine.—In rats nicotine exerts an antidiuretic effect. This is abolished by removal of the pituitary gland, suggesting that nicotine, like acetylcholine, liberates the antidiuretic hormone of the posterior lobe of the pituitary. In man the smoking of one or more cigarettes causes an inhibition of the diuresis that follows the drinking of 1 liter of water, and the antidiuretic action lasts for one to three hours. To establish that the effect of smoking is due to the nicotine inhaled, Burn and co-workers carried out experiments in which the subject did not smoke but received an intravenous injection of nicotine acid tartrate. Amounts corresponding to 0.33 to 1 mg. of nicotine caused an antidiuretic action resembling in duration that due to the smoking of one to three cigarettes. The inhibition of the diuresis was proved to be due to the release of the pituitary antidiuretic hormone, because this hormone was found in the urine after smoking. This hormone is believed to be the same as vasopressin, which constricts blood vessels, including the coronary vessels. Other experiments were carried out on the Starling heart-lung preparation to determine what concentration of posterior lobe extract was sufficient to cause vasoconstriction of the coronary vessels. Concentrations equal to 100 milliunits in 5 liters of blood are sufficient to cause coronary constriction in the coronary vessels of the dog, and may therefore have the same effect in man. Smoking of one or two cigarettes liberates in man from 3 to 190 milliunits. The fate of nicotine in the body is unknown, but it appears that the power to destroy it decreases with age. If this is so, those of advancing years who show signs of cardiac irregularity or of coronary involvement should not smoke, because smoking involves some unknown degree of restriction of coronary circulation.

Journal of Physiology, London

114:1-165 (June) 1951. **Partial Index**

Action of Extracts from Anterior Lobe of Pituitary Gland on Islets of Langerhans in Pancreas of Mouse. L. E. Mount.—p. 1.
Further Observations on Effect of Adrenaline on Blood Flow Through Human Skeletal Muscle. R. S. Duff and H. J. C. Swan.—p. 41.
Facilitation of Conduction Rate in Nerve Fibers. T. H. Bullock.—p. 89.
Ionic Movements During Nervous Activity. R. D. Keynes.—p. 119.
Silent Period in Muscle of Human Hand. P. A. Merton.—p. 183.
Carbohydrate Metabolism and Muscular Exercise. C. G. Douglas and A. C. E. Koch.—p. 208.
Role of Hypoglycaemia and of Adrenaline in Response of Adrenal Cortex to Insulin. M. Vogt.—p. 222.
Neurone of Human Autonomic System and So-Called "Senility Pigment." J. Bronté Gatenby and T. A. A. Moussa.—p. 252.
Study of Renal Clearance and Distribution in Body Fluids of N-Methyl-2-Pyridone-5-Carboxylamide, Using Improved Method of Determination. W. I. M. Holman and P. Lous.—p. 255.

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BOOK REVIEWS

Annual Review of Medicine. Volume II. Windsor C. Cutting, Editor, and Henry W. Newman, Associate Editor. Cloth. $6. Pp. 485, with illustrations. Annual Reviews, Inc., Stanford, California, 1951.

This relatively new member of an old and distinguished family of annual reviews (including the Annual Reviews of Physiology, Biochemistry and Microbiology) is a welcome addition. In this volume, 26 outstanding authors known for their contributions in various branches of medicine have reviewed and evaluated the current literature in their fields, emphasizing those aspects in which they are particularly interested. There are chapters on diseases of each of the major systems of the body as well as on psychiatry, nutrition, radiology, and laboratory diagnosis. Additional sections cover neoplastic diseases, virus and rickettsial diseases, hemorrhagic and leukocytic diseases, and diseases due to physical agents. A chapter on allergy is devoted to the relationship of the pituitary and adrenal glands to hypersensitivity, and a special chapter contains a discussion of the general adaptation syndrome by Selye. In addition to an extensive bibliography at the end of each chapter, the book contains an annotated list of reviews in medicine. The entire work is indexed by subjects and authors. This is a useful reference work that can be recommended to clinicians and investigators.

Bronchial Asthma: Its Relation to Upper Respiratory Tract Infection. By R. J. Whiteman, M.B., Ch.M., F.R.A.C.S., Hon. Consulting Surgeon for Ear, Nose and Throat Diseases, and Medical Officer-in-Charge, Asthma Clinic, Lewisham Hospital, Sydney, New South Wales. Cloth. 15s. Pp. 184. H. K. Lewis & Co., Ltd., 136 Gower St., London, W.C.1, 1951.

This is a restatement of the old (and in this country, abandoned) concept of nasal infection as the major basis for asthma and nasal allergy. The author's treatment of all such conditions, including seasonal hay fever and unquestioned allergic asthma, consists of making windows in the antra, repeated lavage of the antra, the use of inhalations of vapors of a solution of menthol and eucalyptus, and the treatment of "colds" at their inception. Without attention to other factors, such as frank allergy, he claims results far superior to those obtained with any and all other methods. In this country such concepts are regarded as out-of-date and the neglect of other approaches distinctly detrimental.

Chest X-Ray Diagnosis. By Max Ritvo, M.D., Assistant Professor of Radiology, Harvard Medical School, Boston. Cloth. $15. Pp. 558, with 615 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1951.

The author's 30 years of experience in the field of radiology have provided a rich background for a reference book which should be of value to the student and practitioner, as well as the chest specialist and radiologist. The purpose of the book is to present the place of radiology in the diagnosis of diseases of the heart and lung, and the author is careful to emphasize the limitations of x-ray diagnosis as well as its advantages.

The book is divided into 10 sections; it includes discussion of diseases of lungs, mediastinum, diaphragm, pleura, the chest wall, soft tissues of the neck, the heart, and great vessels. The clinical picture of each disease is discussed in relation to x-ray diagnosis. Special methods of examination are presented so that the reader who is not specially trained in radiology can understand the significance of these techniques. The emphasis given in both the presentation and the bibliography of certain diseases at times reflect the author's interests more than the clinical importance of the diseases discussed. Thus the chapter describing diaphragmatic hernia is far more authoritative and complete than the subsection on pulmonary tuberculosis. This does not detract from the value of the book, however.

The format and type are excellent, and the book is illustrated with a wealth of clinical material. Adequate reproduction of x-rays is difficult, and there are times when pertinent detail has been lost, but by and large the illustrations are adequate to demonstrate the diseases discussed.

The book is written in a simple easily read style, and the organization is sound. It is a useful book for occasional reference or for intensive reading and is a valuable addition to the literature on this subject.

A Manual of Artificial Radioisotope Therapy. Edited by Paul F. Hahn Cloth. $6.80. Pp. 310, with illustrations. Academic Press, Inc., 125 E. 23rd St., New York 10, 1951.

This well-written and carefully organized book presents discussions of the innumerable problems of instrumentation, technic, and dosimetry connected with the use of radioactive isotopes in the clinical laboratory. It deserves special praise for keeping in view, throughout the 14 chapters, its essential purpose of applying these isotopes in the treatment of human disease. Five chapters are especially devoted to the work done on hyperthyroidism, carcinoma of the thyroid, other tumors, and the lymphoid-macrophage diseases, including Hodgkin's disease and the acute and chronic leukemias. Because this work is so carefully done, it is valuable even though there have been many negative results. A concluding chapter, "Planning the Radioisotope Program in the Hospital," gives many practical suggestions.

Although there is some concern that the overenthusiastic or the inadequately trained may make mistakes, more persons are becoming aware of the meaning and need of controls in research on therapeutic methods and learning to appreciate the hazards of work with ionizing radiations. The precautions to be taken are now well known, and it is stated that continued effort will be made to shift the responsibility for safety measures from centralized to local control. A steady increase in the use of radioisotopes is anticipated. For anyone undertaking such work, this book will prove invaluable.

The 1950 Year Book of Endocrinology (January, 1950-January, 1951). Edited by Willard O. Thompson, M.D., Clinical Professor of Medicine, University of Illinois College of Medicine, Chicago. Cloth. $5. Pp. 499, with 138 illustrations. Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1951.

In keeping with the usual Year Book style, this volume consists for the most part of reviews of important clinical and experimental articles in the field of endocrinology published during 1950. Much space has naturally been devoted to corticotropin (ACTH) and cortisone, but ample consideration has also been given to the thyroid, parathyroids, and other glands of internal secretion. The opening chapter presents a survey of the advances in endocrinology over the past 10 years. The broad selection of articles and the liberal annotations by the editor should prove stimulating to the general practitioner who wants to keep up to date in the field of clinical endocrinology.

Large Quantity Recipes. By Margaret E. Terrell, M.A., Professor of Home Economics and Director of University Dining Halls, University of Washington, Seattle. Selected and tested under sponsorship of American Dietetic Association. [Second edition of "Quantity Food Service Recipes."] Cloth. $7. Pp. 414, with illustrations by Jean McConnell. J. B. Lippincott Company, 227-231 S. 6th St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1951.

This cook book will prove of great value to all those concerned with large quantity cookery and menu planning. The author is well qualified to write on this subject through training and experience as director of the University of Washington Dining Halls. The book was written and the recipes tested under the sponsorship of the American Dietetic Association. The contents represent the work of a committee of experts on quantity food preparation and service as well as that of the author.

Recipes are well constructed and easy to follow. Exact measurements (given in both weight and volume), carefully written directions in correct order, yield with measurement of serving, and exact temperature for baking help to produce a standard

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

product each time the recipe is used. Also, suggestions for storage or holding of the product should prove useful. This book certainly should find a place in every hospital kitchen.

Microbiology and Pathology for Nurses. By Mary Elizabeth Morse, M.D., Martin Frobisher, Jr., Sc.D., Chief, Bacteriology Section, United States Public Health Service, Communicable Disease Center, Atlanta, Ga., Lucille Sommermeyer, R.N., B.S., M.Ed., Nurse in Charge, Nursing Research Laboratory, United States Public Health Service, Communicable Disease Center, Atlanta, and Raymond H. Goodale. Third edition. Cloth. $4.75. Pp. 815, with 271 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

In this excellent volume, considerable attention is paid to the practical application of microbiologic knowledge in handling patients, particularly those harboring infectious organisms. The material is up-to-date and lucidly presented.

Pathology is divided into sections dealing with general, applied, and clinical pathology. Sufficient information is given in each to give the nurse a good understanding of the patient's condition and of specimen collection. Review questions are included at the end of each chapter as well as extensive bibliographies for those interested in more detailed information.

In the discussion of disease produced by the protozoan Endamoeba histolytica, the authors quote Craig's findings on the number of carriers present in the population of the United States. It might have been desirable to quote Craig still further to describe symptoms caused by this parasite rather than to leave the reader with the impression that a chronic disease is never produced.

The illustrations and the printing are excellent.

Bacteriology. By Robert E. Buchanan, Research Professor, Iowa State College, Ames, and Estelle D. Buchanan. Fifth edition. Cloth. $6. Pp. 678, with illustrations. The Macmillan Company, 60 5th Ave., New York 11, 1951.

The new edition of this standard textbook was brought up-to-date in every respect. The results of the rapid advances in bacterial morphology, physiology, genetics, taxonomy, immunology, and physics were correlated with their importance to microbiology. The book covers a wide field in a concise manner. The text is condensed, relating only essentials, but it is most informative. It is recommended to everyone who wishes to teach or to learn the basic facts of bacteriology.

Human Anatomy and Physiology. By Nellie D. Millard, R.N., M.A., Science Instructor, University of Illinois, Cook County School of Nursing, Chicago, and Barry G. King, Ph.D. Third edition. Cloth. $4.25. Pp. 596, with 309 illustrations of which 215 are by Lucille Cassell Innes. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

This attractive work offers a survey of the structures and functions of all parts of the human body in textbook form, each chapter being followed by a summary and a set of questions. The physiological information is sometimes vague and fails to answer some of the questions most likely to interest a student for personal reasons, for instance, in connection with puberty and adolescence. At times, as in the discussion of the "spinal animal," the reader is left to learn more by implication from the context than from formal definition or explicit statement. However, this tendency to abstraction is balanced by the concreteness afforded by many excellent illustrations; 35 new drawings by Lucille Cassell Innes appear in this edition. It is to be recommended especially for classes at junior college level and schools of nursing.

Lane Medical Lectures: Companionship of Water and Electrolytes in the Organization of Body Fluids. By James L. Gamble. Stanford University Publications, University Series, Medical Sciences, Volume V, No. 1. Paper. $2.50. Pp. 90, with 42 illustrations. Stanford University Press, Stanford, Calif.; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1951.

This small volume comprises a series of four lectures: (1) The Chemical Structure of the Body Fluids and the Pathogenesis of Acidosis and Alkalosis; (2) Water and Electrolyte Balance; (3) Processes of Dehydration; and (4) Parenteral Fluid Therapy. It is, as the author states in his preface, chiefly a revision of his previous reviews of the subject of water and electrolyte metabolism, almost an abbreviated version of his invaluable lecture syllabus "Chemical Anatomy, Physiology and Pathology of Extracellular Fluid." Charts, tables, and sometimes passages in the text are bodily transposed from these previous publications to these lectures. Even one who is familiar with these other works will find the lectures refreshing. Although they contain little new material, the emphasis and organization are new, and they are as delightful to read as they must have been to hear. "These lectures," the author says in his preface, "are derived from my efforts, extending over a good many years, at exposition of the physiology and pathology of the body fluids." In addition to his great scientific achievements, Gamble is conspicuous for his respect for readers and for students, his sense of obligation to present his material as clearly and vividly as possible. This is evidenced in his graphic representations and tables, but most of all in his style. In these lectures, in apology for the application of the word "structure" to a fluid, he remarks, ". . . the method of exposition which I shall use . . . might be described as morphological rather than mathematical. The choice of method is imposed because I have not an adequate fluency in the more elegant language of mathematics." If he is really deficient in this respect, his readers should be thankful. He seems at no loss to express himself in simple arithmetic when it is useful and has the gift of reducing complex concepts to this universal medium of exchange. He makes no labored apologies for teleological modes of presentation, indulging in them freely to make the presentation more vivid. Basic underlying mechanisms and theories may be slighted, but facts are treated rigorously. Mathematical language, like technical clichés, too often serve as means of evading the proper use of the English language. No glossary is needed for these lectures, but merely the possession of a reasonable vocabulary and appreciation of beauty of style. A sense of humor will add to the reader's enjoyment. These qualities should make the volume profitable reading even for those who have no special interest in the subject matter.

Lehrbuch der Hygiene. Von E. Rodenwaldt und R. E. Bader. Cloth. 68.70 marks. Pp. 823, with 102 illustrations. Springer-Verlag, Reichpietschufer 20, Berlin W. 35 (West-Berlin); Neuenheimer Landstrasse 24, Heidelberg; Göttingen, 1951.

This is a fine new German contribution to the subject of hygiene. Its scope and treatment are reminiscent of the well-known English text "Hygiene and Public Health" by Rosenau. It begins with a section on general hygiene, which includes considerations of climate and weather, housing, including ventilation, heating and light, the hygiene of water, nutrition, waste and sewage disposal, the hygiene of burial and cremation, clothing, hygienic living in general, and hygiene and health in industry. The second section of the book is devoted to epidemiology and the control of infectious diseases, with the usual divisions.

In general, the material is standard, with the natural emphasis by a German author on German sources and German methods. The section devoted to public health organizations and methodology is exceedingly brief, comprising only 15 pages at the end of the volume, but what there is, is up-to-date, including a discussion of the world health organization. There are individual chapter bibliographies; while these place heavy emphasis on German sources, they do not exclude references to the literature in other languages. The book is not extensively illustrated, but there are some good color plates and the diagrammatic illustrations are clear, well selected, and well drawn.

Poisons: Their Isolation and Identification. By Frank Bamford, B.Sc. With foreword by Sir Sydney Smith, C.B.E., M.D., F.R.C.P., Regius Professor of Forensic Medicine, University of Edinburgh. Third edition revised by C. P. Stewart, D.Sc., Ph.D. Cloth. $5.50. Pp. 316, with 23 illustrations. The Blakiston Company (Division of Doubleday & Company, Inc.), 1012 Walnut St., Philadelphia 5, 1951.

This edition has been considerably improved by a more rational sequence and inclusion of much new material. The book is intended to be a practical manual, and admirably fulfils its aims. Originally written by Bamford on the basis of wide personal experience, its high degree of practicability has been maintained by Stewart. The value of this manual is based on the inclusion of methods that have been tried and found adequate and reliable. Omissions of accepted procedures are few. Because of its readability and reliability, it can be well recommended for students, practicing physicians, and toxicologists.

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QUERIES AND MINOR NOTES

TREATMENT OF LOWER NEPHRON NEPHROSIS

To the Editor:—*What is the most satisfactory and successful treatment of lower nephron nephrosis? Will intravenous injections of "solution B" with glucose in water bring a reasonably prompt reversal, or will "hyprotigen" Baxter give a better chance of recovery? Will the addition of a procaine solution be valuable?* *J. W. Hopkins, M.D., Glendale, Calif.*

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—Most patients with uncomplicated lower nephron nephrosis will recover if treated conservatively. This involves the administration of fluid in an amount not to exceed that required by preexisting deficits and daily losses. Daily losses should be calculated from the urine volume, gastrointestinal losses, and the insensible water loss (approximately 0.5 cc. per kilogram of body weight per day in the adult) plus increments for such things as fever and obvious sweating. At least 100 gm. of glucose must be administered each day within the volume of fluid prescribed. This may be given by mouth or by stomach tube along with emulsified fat mixtures to increase the caloric content; however, nausea and vomiting may prevent this, and the intravenous administration of 15% dextrose in water may be necessary. This should be accompanied by administration of appropriate multivitamin solutions. The intramuscular injection of testosterone for a 7 to 10 day period may be of benefit in preventing protein breakdown. Electrolytes should be replaced as lost from the gastrointestinal tract, but multi-electrolyte solutions such as "solution "B" have no place in therapy, because of their potassium content. Similarly, amino acid mixtures or protein digests should not be given, since, until the basic caloric requirement is satisfied, these will be utilized for their energy value alone and the nitrogen residue will serve only to increase the nonprotein nitrogen.

The use of artificial kidneys and peritoneal irrigation by groups experienced in these techniques has been in some cases a valuable adjunct, but for the present the procedure should be limited to such groups. Although the use of procaine solutions and lumbar block to relieve renal vasoconstriction has been advocated on the basis of animal experience, there is no satisfactory evidence in the human that these methods will reverse the renal lesion or bring about more rapid improvement, once tubular necrosis has occurred.

It should be remembered, however, that severe dehydration and electrolyte imbalance may precipitate acute renal insufficiency, which may then be corrected by appropriate fluid therapy. This must be sharply distinguished from the case in which tubular necrosis already exists and in which the administration of large amounts of fluid and electrolyte will serve only to precipitate pulmonary edema without ensuing diuresis.

Answer.—The diagnosis "lower nephron nephrosis" presumably includes anurias or extreme oliguria due to severe damage to the entire tubule system, as well as cases of prerenal anuria in shock and liver disease. No known solution can be depended on for prompt relief, and no saline or amino acid solution should be given until diuresis sets in. Procaine solution is reported to start diuresis in some cases, but failure is more frequent. Replacement of fluid and salt lost from the body each day, and 1,500 cc. of fluid, by mouth or vein (5% dextrose solution), together with a carbohydrate and fat diet to provide 2,000 calories a day, is the best conservative treatment. If diuresis does not occur by the end of the second week, artificial kidney therapy is recommended. When diuresis begins, the urine is rich in electrolytes, and both salt and potassium may be rapidly lost. A diet liberal in salt and fruit juices usually provides replacement at that time, but saline may have to be administered intravenously for several days.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

EXPERIMENTAL PROPHYLAXIS OF POLIOMYELITIS

To the Editor:—*Where can I obtain information on the so-called poliomyelitis injection, which is receiving publicity in this area lately? These injections are being given in Dallas.* *M.D., Texas.*

Answer.—The inquiry presumably refers to injections of gamma globulin. This agent, when prepared from large pools of adult human plasma, neutralizes in vitro all of the three known types of poliomyelitis virus (Bodian, D.: *Proc. Soc. Exper. Biol. & Med.* **72**:259, 1949). It was tried therapeutically with negative results (Bahlke, A. M., and Perkins, J. E.: *J. A. M. A.* **129**:1146 [Dec. 22] 1945). It is being used to some extent as a prophylactic agent, but its actual effectiveness for this purpose has not been established. It is hoped that controlled studies now underway will finally establish whether an injection of gamma globulin administered just prior to an infection with the virus is effective in preventing paralysis. Available evidence bearing on the question was recently reviewed by W. McD. Hammon (*Pediatrics* **6**:696, 1950).

TULAREMIA

To the Editor:—*A woman, 27, has tularemia. On Nov. 30, 1950, she dressed a wild rabbit and pricked her thumb with a bone. Four days later she had a severe chill, and a temperature of 103 F. followed with a drenching sweat. I gave her aureomycin, 500 mg. every six hours for ten days, and streptomycin, 0.5 gm., hypodermically twice daily for seven days. Please suggest treatment. How long should I expect her laboratory report to show positive results?*

B. L. Morrow, M.D., Salina, Okla.

Answer.—This patient has already been adequately treated, really overtreated. Either of the two antibiotics that were given would have induced a satisfactory remission alone in the dosages used. The patient should be considered well when all complaints disappear. The serum agglutination test can be expected to remain positive for at least 35 years. This test result has no relation whatever to the status of recovery. No prognostic information is derivable from a blood test; it is a test that should be used solely for the diagnosis of tularemia, not as a guide to treatment.

The patient needs merely assurance that she has recovered completely and that she will resist reinfection if again exposed all through her future life.

TRUSS AND SCIATIC PAIN

To the Editor:—*A man of 67 has worn a tight truss for bilateral inguinal hernia for many years. For the last few years he has had intermittent pain of sciatic distribution. A year ago he had some foot drop on the right side, which is now much improved; but there is still peroneal weakness and moderate atrophy on the right. The truss spring cuts deeply into the flesh of the hips. I would like to know whether it has ever been shown that such pressure can set up a reflex disturbance, directly or indirectly, in the intervertebral area.*

Miles H. Robinson, M.D., Walla Walla, Wash.

Answer.—There is no reason to believe that the truss in this case, however tight, was in any way responsible for the sciatica or for the partial paralysis of the musculature of the foot and leg. The cause of this disturbance is probably to be sought in the lower lumbar spine. A thorough neurological investigation is indicated.

PAIN IN FINGERS

To the Editor:—*A housewife, 37, has noted pain in the fingers and hands for two years. For two months it occasionally went from the elbows into the fingers. One or both hands may be affected. Often it wakes her up in the night. The hands do not change color, nor will heat or cold affect them. Her feet have always been cold, and she gets cramps in her legs whenever she stretches. There are no abnormal reflexes, and the sensation is intact. Does this resemble a neuritis or lack of circulation?*

Robert E. Littlejohn, M.D., Sequim, Wash.

Answer.—Pain in the fingers accompanied by shooting pain from the elbows immediately raises the suspicion of compression neuritis of cervicothoracic roots or brachial plexus. X-ray of the chest and of the thoracic and cervical spine may be helpful. The possibility of scalenus compression should be investigated. The vascular component seems fairly well excluded by lack of change in color and temperature of the fingers. A vasomotor component often accompanies neuritic lesions.

PIGMENTED AREAS ON FACE

To the Editor:—*I see frequently in my practice darkened areas of pigmentation of the skin particularly in the region of the temples of the face. What is the explanation for this, as well as for the adjacent lighter and patchy areas? Is any treatment known?*

M.D., Oregon.

Answer.—The patches of hyperpigmentation may be chloasma or they may be examples of Berlocque pigmentation, the result of the action of sunlight on perfume in cosmetics. Chloasma may be idiopathic or the result of gonadal influences; it is seen frequently in pregnancy, at the menopause, and in the presence of ovarian disorders. In general treatment is unsatisfactory, although slight improvement may be attained by the application of peeling or bleaching preparations, such as fresh hydrogen peroxide in a water-soluble preparation, and, of course, no further use of the particular scented cosmetic.

INFECTIOUSNESS OF SYPHILIS DURING TREATMENT

To the Editor:—*It has been ruled that all syphilitics with open sores in this hospital shall be kept in isolation until the lesions heal. It has been my understanding that within less than 24 hours following the institution of penicillin therapy such patients are noncontagious. I would appreciate having your opinion.*

M.D., Oklahoma.

Answer.—It has been demonstrated many times that spirochetes no longer can be recovered from chancres 24 hours after the administration of penicillin, particularly after the recently recommended large initial dose of 2,400,000 units of slowly absorbed penicillin.

VIRUS DISEASES IN PREGNANCY

To the Editor:—*In a patient seven to eight weeks pregnant mumps developed. During the acute stage she had a slight bloody discharge. What is the present concept as to possible damage done to the embryo, particularly in this case of mumps, and generally by a virus infection?*

M.D., Minnesota.

Answer.—There is rather general agreement that German measles occurring in the first three to four months of pregnancy gives rise to a sizable increase in congenital defects in the offspring and often serious ones. Many believe that the incidence is so high that abortion is indicated. There is neither proof nor agreement concerning the other virus diseases as causes of congenital defects.

In the case presented, the bloody discharge probably is coincidental and of no value in prognosticating damage to the fetus. There would seem to be very little indication for interrupting this particular pregnancy; however, future study and more statistics may possibly change this picture.

DEATH RATE AMONG MENTAL PATIENTS

To the Editor:—*Kindly give me the life expectancy of seriously deteriorated patients with dementia precox receiving good institutional care as compared with the normal.*

M.D., Florida.

Answer.—According to Benjamin Malzberg's report, "Mortality Among Patients with Mental Disease" (Utica, N. Y., State Hospital Press, 1934), the death rate of patients with dementia precox (as a group) was 2.3 times that of the general population. "Deteriorated" patients were not here separately calculated, but it is probably safe to conclude that the death rate of this group was nearer to that of the general population, because it is among young mental patients that the greatest disproportion in death rate occurs—about 20 times as great as that of the general population.

ELECTRIC BLANKETS

To the Editor:—*Is there any reason why a patient with a permanently nailed hip should be cautioned against the use of a properly constructed and approved "electric blanket?" Are there published case histories of harm or discomfort to such a patient?*

Charles E. Brown, M.D., Atlanta, Ga.

Answer.—Theoretically, electric currents are induced in a metallic conductor by the presence of an alternating current in the vicinity, and the temperature of the conductor should rise. In the situation described, however, the effects should be quantitatively negligible, and no reports of harm of this sort from the use of electric blankets have come to the attention of the Council on Physical Medicine and Rehabilitation.

MANIC DEPRESSIVE PSYCHOSIS

To the Editor:—*I should like to comment on the reply to Dr. Kahan's letter concerning the prevention of manic depressive recurrences as published in Queries and Minor Notes* (**146:**1456 [Aug. 11] 1951). *The person who wrote the answer stated, "Nothing in the field of psychiatry is known to prevent recurrences." This indicates a remarkable lack of contact with recent work in this field, particularly the article in the* American Journal of Psychiatry *by Dr. Geoghegan and myself* (**187:**743 [April] 1951) *and our preliminary report in the same journal* (**105:**494) *in January, 1949. Prophylactic electroshock following the plan we have outlined will prevent recurrences in the majority of such patients. Our work has been repeated in various centers in the United States with confirmatory results. My article "The Prevention of Recurring Manic-Depressive Illnesses"* (Canad. M. A. J. **64:**198 [March] 1951) *enlarges this work and also reports a number of cases in which the recurring tendency was successfully counteracted by prefrontal lobotomy. I am sending reprints of these papers to Dr. Kahan.*

G. H. Stevenson, M.D.
Superintendent The Ontario Hospital
London, Ont., Canada.

CARDIAC ARRHYTHMIA IN A MYASTHENIC

To the Editor:—*The question raised by Dr. Nicholas M. Greene in Queries and Minor Notes, May 5, 1951, regarding the use of quinidine in myasthenia gravis was answered "There are no reported instances in which quinidine, or any of its salts, has been administered to patients with myasthenia gravis."*

*I refer you to an article of mine, "Masked Myasthenia Gravis" (*J. A. M. A. **141:**917 [*Nov. 26*] *1949). In this report unsuspected, subclinical myasthenia gravis became obvious during the administration of quinidine sulfate.*

Sydney J. Weisman, M.D.
6363 Wilshire Blvd.
Los Angeles 48.

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